ATTACHMENT 22

AGENT MONITORING PLAN

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LIST OF ACRONYMS and TERMINOLOGY

ACRONYMS

ACAMS	Automatic Continuous Air Monitoring System
ADAFC	ACAMS Dilution Air Flow Controller
AL	Air Lock
ASC	Allowable Stack Concentration
BRA	Brine Reduction Area
BSA	Buffer Storage Area
CAL	Chemical Assessment Laboratory
CAMDS	Chemical Agent Munitions Disposal System
CDRL	Contract Data Requirements List
CDTF	Chemical Demilitarization Training Facility
CHB	Container Handling Building
CON	Control Room
COR	Corridor
CPA	Conversion Pad Assembly
CYC	Cyclone
DAAMS	Depot Area Air Monitoring System
DAL	Discharge Airlock
DCD	Deseret Chemical Depot
DFS	Deactivation Furnace System
DPE	Demilitarization Protective Ensemble
DSA	DPE Support Area
DUC	Duct
DUN	Dunnage Incinerator
ECF	Entry Control Facility
ECL	Engineering Control Level
ECR	Explosive Containment Room
ECV	Explosive Containment Vestibule
EHM	Equipment Hydraulic Modules
FIL	Filter
GB	Nerve Agent GB
GC/FPD	Gas Chromatograph / Flame Photometric Detector
GC/MSD	Gas Chromatograph / Mass Spectrometer Detector
GFP	Government Furnished Property
GLD	Gross Level Detector
HD	Blister Agent HD
HDC	Heated Discharge Conveyer
IDLH	Immediately Dangerous to Life and Health
LCO	Limiting Conditions of Operations
LIC	Liquid Incinerator
LOQ	Limit of Quantification
LQAP	Laboratory Quality Assurance Plan
LQCP	Laboratory Quality Control Plan
LSS	Life Support System
LVS	Low-Volume Sampler

MDB	Munitions Demilitarization Building
MED	Medical Facility
MER	Mechanical Equipment Room
MON	Monitoring
MPB	Munitions Processing Bay
MPF	Metal Parts Furnace
MPL	Maximum Permissible Limit
MSB	Monitor Support Building
MUN	Munitions
OBS	Observation Corridor
ONC	On-Site Container
P&A	Precision and Accuracy
PAS	Pollution Abatement System
PDARS	Process Data Acquisition and Reporting System
PMB	Personnel Maintenance Building
PMCD	Project Manager for Chemical Demilitarization
PPE	Personnel Protective Equipment
QA	Quality Assurance
QC	Quality Control
QP	Field Quality Control Samples
RCRA	Resource Conservation and Recovery Act
RTAP	Real Time Analytical Platform
SDS	Spent Decontamination System
SEC	Secondary
SPS	Secondary Power (Distribution) System
TCB	Treaty Compliance Building
TMA	Toxic Maintenance Area
TOCDF	Tooele Chemical Agent Disposal Facility
TOX	Toxic Cubicle
TWA	Time Weighted Average
UPA	Unpack Area
UPS	Uninterruptible Power Supply
VX	Nerve Agent VX
WAP	Waste Analysis Plan
WHS	Warehouse
Z	Hazard Level, i.e. TWA, ASC, IDLH etc.

TERMINOLOGY

Engineering Control or Under Engineering Control: When the environment in a room or area is under negative atmospheric pressure and the evacuated air is processed to remove contamination, the area or room is considered to be "under engineering control." An example is a munitions processing room that is expected to be contaminated with agent. The room is maintained under negative pressure to prevent agent leakage out of the room. The air that is evacuated from the room is filtered through carbon to remove the agent.

ASC: Allowable Stack Concentration (ASC): A ceiling value that serves as a source emission limit, and not as a health standard. It is used for monitoring the furnace ducts and common stack. The ASC provides an early indication of an upset condition, and must be accurately measurable in a timely manner by a well-designed, well-constructed, and well-operated incineration facility. Modeling of worst-case credible events and conditions at each installation must confirm that the general population limit (GPL) monitoring level is not exceeded at the installation boundary as a consequence of releases at or below the ASC. It should be noted when monitoring at the stack, because of the high temperature and moisture content of stack emissions, a dilution control device is used before ACAMS and DAAMS sample collection and subsequent analysis. The ASC value for GB and VX is 0.0003 mg/m^3 and the ASC value for HD is 0.03 mg/m^3.

Baseline: Before each campaign the monitoring system is operated in the configuration in which it will be used during the campaign. This is known as baseline operations. The purpose for the baseline is to provide evidence that the whole system will perform within required tolerances and requirements, and to document the configuration of the system at the time of the baseline. Once a system is baselined, the configuration of the system must not be changed (within limits) or the baseline has been violated and a new baseline must be performed.

Category A Area: The toxic processing area supported by the cascade ventilation system designated for probable liquid and vapor agent contamination (for example, munitions processing bay, toxic cubicle).

Category B Area: The toxic processing area supported by the cascade ventilation system designated for possible vapor agent contamination only.

Category C Area: The nontoxic work area adjacent to Category A or B areas that is supported by the cascade ventilation system designated for possible low-level vapor agent contamination (for example, observation corridors).

Category D Area: The nontoxic work area designation for areas considered uncontaminated.

Category E Area: The area designated for a positive pressure, filtered air environment (for example, Control Room).

Distal End: Location where the air sample enters into the sampling system except for the MPF discharge airlock and DAAMS duct monitors for VX. The distal end for VX at the MPF discharge airlock ACAMS and duct DAAMS is at the V/G conversion pad located five inches from where the sample enters the system. The MPF discharge airlock DAAMS V/G conversion pad is located 18 inches from where the sample enters the system.

ECL: Engineering Control Level (ECL) is used to indicate that the sensitivity of the ACAMS at this location has been increased. An example of this is a munitions corridor that is specified to be monitored at Maximum Permissible Limit (MPL) levels but the agent concentrations are below that level. Therefore the ACAMS always has a zero reading. A local decision was made to monitor at the Immediately Dangerous to Life and Health (IDLH) level. This puts the actual agent concentration within the range of the ACAMS. The Quality Control (QC) data from ECL stations are grouped separate from other stations monitored at the same level. In other words, QC data for all Time Weighted Average (TWA) stations are grouped for statistical purposes but ECL TWA stations are not included in the group.

GPL: General Population Limit: The allowable 72-hour time-weighted average concentration for indefinite unprotected exposure (24-hours-per-day, 7-days-per-week for a 70-year lifetime) of the general public without adverse health effects. The GPL value for GB and VX is 0.000003 mg/m^3 and HD is 0.0001 mg/m^3.

IDLH: Immediately Dangerous To Life and Health (IDLH): The maximum concentration from which, in the event of a respirator failure, one could escape within 30 minutes without a respirator and without experiencing any escape impairing (for example, severe eye irritation) or irreversible health effects. IDLH levels are 0.2 mg/m3 for GB, 0.02 mg/m3 for VX. IDLH levels have not been established for vesicants because workers are required to wear supplied air or self-contained breathing apparatus at vesicant concentration much lower than IDLH levels.

Interferent: An interferent is a chemical compound that will cause an Automatic Continuous Air Monitoring System (ACAMS), Depot Area Air Monitoring System (DAAMS) or M8A1 to false alarm or malfunction in such a way that they could not detect agent or may false alarm. There are some interferents that mask agent so it is not detectable, including some paints, lubricants, and even some foods. The DAAMS analysis is better at discriminating between agent and an interferent than the ACAMS. For this reason, DAAMS are paired with ACAMS at many locations for the purpose of confirming alarms.

MPL: Maximum Permissible Limit for Demilitarization Protective Ensemble (DPE): An engineering control level based on the maximum concentration in which personnel in DPE may work for 2 hours or less per entry in agent-contaminated areas. The MPL value for GB is 100 mg/m3. VX does not have an applicable MPL monitoring value, due to its low vapor pressure.

Neat Agent: Neat agent is agent that has not been diluted since manufacture or preparation. It may not be "pure" but it is as manufactured. Once it is diluted, it is no longer considered neat.

RDTE Dilute Solutions: RDTE Dilute Solutions are defined by the agent concentration and by the quantity in a single container. They are as follows:

Agent	Maximum Total Quantity	Maximum Concentration
GB	20 mg	2.0 mg/ml
VX	10 mg	1.0 mg/ml
Mustard	100 mg	10.0 mg/ml

TWA: The airborne concentration to which unprotected workers may be reportedly exposed for eight hours per day, five days per week, for a working lifetime without adverse health effects. The monitoring level is operationally treated as a ceiling value for the purpose of masking workers at a site. The TWA for GB is 0.0001 mg/m^3, VX is 0.00001 mg/m^3 and HD is 0.003 mg/m^3.

AGENT MONITORING PLAN

22.1 POLICY/GOALS OF MONITORING OPERATIONS

22.1.1 Purpose

22.1.1.1 This Monitoring Plan contains monitoring requirements for VX bulk and munitions processing, and processing of VX and GB secondary waste. This plan reflects the monitoring for each processing area when it is being used for agent work. When agent work in a given area is suspended, the monitoring for that area may be suspended as stated in Paragraph 22.26. Before campaigns other than those listed above commence, a revised monitoring plan shall be developed.

22.1.1.2 The primary purpose of Monitoring is to limit/prevent and document exposure of personnel to chemical warfare agents and protect the environment from the introduction of agents. Agent monitoring is also performed for process control purposes to identify upset conditions in the processes and to measure agent concentrations in toxic areas to allow entry of personnel wearing various levels of protective clothing.

22.1.2 Perimeter Monitoring

22.1.2.1 Monitoring of the perimeter of the Deseret Chemical Depot (DCD) is conducted by Chemical Agent Munitions Disposal System (CAMDS) personnel to provide evidence and document whether there is any chemical agent migration outside of government property.

22.1.3 TOCDF Station Numbering and Locations

22.1.3.1 This Monitoring Plan provides a table of locations and station numbers (Appendix A) for agent monitors associated with TOCDF.

22.1.4 Summarized Requirements

22.1.4.1 Monitoring Operations monitors for VX bulk containers and munition processing and VX and GB secondary waste. Monitoring in the TOCDF facility is conducted with the use of ACAMS and DAAMS (confirmational and historical), in various combinations as outlined in Appendix A. Analysis of DAAMS samples is by Gas Chromatograph/Flame Photometric Detector (GC/FPD) or Gas Chromatograph/Mass Spectrometer Detector (GC/MSD). The confirmational DAAMS tubes are co-located with the ACAMS to confirm or deny the ACAMS alarm in accordance with Section 22.39 for the timeframe the ACAMS was in alarm. In these cases, the ACAMS is the primary monitor and is used to quantify the amount of agent present while the DAAMS is used to verify the presence of agent. The historical DAAMS tubes are sampled for a specified timeframe and analyzed on a GC/FPD or GC/MSD. The historical tubes are not connected to an alarm. Historical DAAMS are located in areas where agent is not expected to be, e.g., lunchroom.

22.2 RESPONSIBILITIES

22.2.1 The monitoring group is responsible to support TOCDF by operating monitoring equipment and routinely collecting samples in and around the TOCDF plant. Monitoring utilizes a variety of monitoring equipment. Much of the equipment is Government Furnished Property (GFP), which is augmented by equipment, and supplies that are obtained from commercial vendors. Monitoring locations include, but are not limited to:

incinerator ducts and stacks, toxic processing areas, airlocks, working areas, and lunchrooms. In addition, monitoring personnel will collect liquid and solid material samples for process control and hazardous waste disposal. These samples will be delivered to the Chemical Assessment Laboratory (CAL) for analysis. The laboratory personnel are responsible for performing the analysis or causing the analysis to be performed by a subcontractor laboratory. Laboratory Quality Control is responsible for inspecting and auditing all Laboratory operations to ensure operation within documented guidelines.

22.3 COORDINATION

22.3.1 There are several levels of coordination performed by monitoring personnel. Other than normal working relationships within the plant and at the CAL, there are two supervisory level coordination points.

22.3.2 Monitoring Manager

22.3.2.1 The Monitoring Manager will coordinate additions or deletions of the workload such as new sampling or monitoring requirements. S/he will be the control point for any changes in monitoring or sampling parameters such as changes of sampling times or sample flows.

22.3.3 Monitoring Team Leader

22.3.3.1 The Monitoring Team Leader for each shift will coordinate the timing of routine monitoring and sampling operations with the Control Room (CON) personnel. This coordination is specified in the applicable Laboratory Operating Procedures (LOPs). Other groups such as Safety or Environmental who may need sampling or monitoring performed will contact the Control Room Operator who will give their direction to the Monitoring Team Leader. The Team Leader or designated certified monitoring technician and at least one team member will answer all ACAMS alarms and will be in direct contact with the Control Room.

22.4 OBJECTIVES OF THE MONITORING PLAN

22.4.1 The Monitoring Plan provides identification of monitoring and sampling locations to allow cataloging of results. The monitors are used to provide agent detection and measurement to aid in providing worker protection, protect occupants in the surrounding community and to indicate that plant-operating conditions are in control.

22.5 AGENT MONITORING PROCEDURES

22.5.1 Procedures used to determine ambient levels of agent rely on ACAMS units, the DAAMS method, and analysis of solid or liquid samples. Monitoring activities are structured to support toxic operations. Maintenance and QC activities for ACAMS are scheduled during times that do not interfere with plant operations. This is done by obtaining permission from the Control Room before any monitor or sampler is taken out of service. The DAAMS is used for the collection of samples of agent for confirmation of ACAMS alarms and as primary monitoring in areas not monitored with ACAMS. All of the monitors must be operational at all times except when they may be off-line for challenging and corrective actions, as documented in approved procedures or monitoring has been suspended in accordance with this plan.

22.6 TOCDF PLANT PROCEDURES

22.6.1 In the demilitarization plant area, hazard classifications and personnel occupancy are the factors used to determine monitoring procedures. When monitoring is conducted for

personnel protection or to assess potential personnel exposure it must be sufficient to identify, verify, and quantify the agent.

22.7 CATEGORIES OF PLANT AREAS

22.7.1 Toxic and Process Areas

22.7.1.1 These areas are potentially contaminated as a result of the presence of uncontained liquid agent. Examples of these areas are the Explosive Containment Room (ECR) and Munitions Processing Bay (MPB). These areas are monitored using an ACAMS. The agent concentrations determine the Personnel Protective Equipment (PPE) that is required for personnel entry. At times, the monitoring may be enhanced to allow the PPE for specific toxic areas to be reduced to enhance worker mobility. This requires Safety approval. This could include changing the ACAMS to a more sensitive detection level or adding a DAAMS sampler to be used to confirm an ACAMS alarm. Toxic Area ACAMS are used to quantify and document potential exposure of personnel.

22.7.2 Adjacent to Toxic Process Areas

22.7.2.1 Areas adjacent to the toxic process areas are potentially contaminated with agent vapor. Associated with these areas are airlocks, which serve as access/egress points between contaminated areas and clean work areas. To limit the transfer of agent from "toxic" areas to "work areas", items and personnel are normally cleared through an airlock. Procedures govern egress through airlocks to prevent items or personnel from exiting toxic areas until they have been monitored using an ACAMS and show agent readings that are less than 1.0 Time Weighted Average (TWA). See Appendix A for specific levels. The person or item is cleared by sampling the air around them. This is done by using a sample line for VX and for GB a sampling line with a wand that is slowly passed over the exiting person or item. All personnel performing this task shall be trained per Attachment 7 (Training Plan) in proper wand operation of the ACAMS.

22.7.3 Outside of Toxic Process Areas

22.7.3.1 Several work places within the facility, such as the Observation Corridors (OBS) and the Unpack Area (UPA), are areas in which agents are contained in a manner preventing, or at least limiting, release. Such handling areas are defined as areas where agent vapor is not normally expected, but with potential for low-level vapor contamination. These areas are considered as "under engineering control" and are monitored.

22.7.4 Airlocks

22.7.4.1 Airlocks are a safety zone between toxic areas and clean areas or the outdoors. There are normally two airlocks in series. The airlock closest to the toxic area is designated as the "A" airlock and the airlock closest to the clean area is designated as the "B" airlock.

22.7.5 Work Areas

22.7.5.1 Within the TOCDF site are many areas inhabited by workers where operations not considered being toxic are taking place. These areas are not "under engineering control" and have little or no potential for vapor contamination. These areas are not monitored for agent. Inside the MDB, examples of work areas include the Chiller Room, Electrical Rooms, Battery Room, Switchgear Room, and UPS Rooms. Examples of work areas outside the MDB include the PUB and warehouses.

22.7.6 Lunch Rooms

22.7.6.1 Enclosed areas in which workers are authorized by Safety to eat or drink are required to have DAAMS monitoring. This is a safety requirement to verify that workers have not carried contamination into these areas.

22.7.7 Positive Pressure Areas

22.7.7.1 These are areas in which there are no agent operations and no potential for vapor contamination, which have the capacity to provide positive pressure with filtered air. This allows personnel in these areas to perform without the need of a mask or protective clothing.

22.8 FILTER MONITORING

22.8.1 Multiple Bank Carbon Filters provide negative pressure ventilation for potentially contaminated areas throughout the plant. A description of the Munitions Demilitarization Building ventilation carbon filters is located in Attachment 5 (Inspection Plan), Paragraph 5.9. The monitoring is performed to provide evidence of filter degradation in order to allow changing of the filter media before there is a possibility of an agent leak to the atmosphere. The filter mid-bed locations are monitored continuously with DAAMS as described in Appendix A. A sample stream switch is used to allow one ACAMS to monitor the mid-beds alternately for VX agent. Carbon filters are also used on the positive pressure system to provide clean air to the Clinic, Control Room (CON), and DPE Support Area (DSA). The MDB HVAC DAAMS tubes are located in the midbed locations as specified in Appendix A for GB and VX agent. All GB DAAMS tubes shall be analyzed daily.

22.8.2 During times when a filter is turned off, the ACAMS that monitors the mid-beds is switched to the filter door vestibule full time. The DAAMS monitoring the mid-beds must be analyzed in the absence of the ACAMS. Once the ACAMS or DAAMS agent readings on the mid-beds reach 3 TWA for GB or VX change-out of the filters shall commence as specified in Module X.

22.8.3 The mid-beds, the stack, and the filter vestibule doors will be monitored continuously with DAAMS, except when changing tubes, even when the filter is not on-line.

22.8.4 The DAAMS tubes in the 4^{th} midbeds for VX or 3^{rd} midbed for GB shall be pulled and analyzed if the HVAC stack ACAMS alarms. The DAAMS tubes shall be pulled and analyzed in accordance with Attachment 3 (Sampling, Analytical and QA/QC Procedures).

22.9 SAMPLING PARAMETERS

22.9.1 The operational control limits for sampling parameters such as sample flow rate and duration of sample time are specified before "Base Line" monitoring is performed.

22.10 DATA HANDLING

22.10.1 Monitoring parameters, such as flow rates and sample start and end times are recorded and accompany the sample to the laboratory. Comments pertaining to equipment malfunction (such as failure to sequence) are recorded and maintained in a database. This information is used to identify the need for corrective action to prevent recurring deficiencies. The corrective action may consist of such things as additional training or changing the types of preventive maintenance for particular types of equipment. All raw data from ACAMS, including calibrations and challenges, (except those at the CAL and some areas in the plant as noted in the Table in Appendix A) are gathered on the Process Data Acquisition and Reporting System (PDARS) in the Control Room and maintained in

a database. The ACAMS strip-chart is used to determine agent concentration and alarm cycle time to within 0.1 monitoring units (0.1 TWA).

22.11 QUALITY CONTROL

22.11.1 QM (Quality Management) Program

22.11.1.1 Confidence in sampling methods that characterize actual ambient concentrations of agent in a given matrix is of utmost importance. An extensive QA Program is required to ensure the quality of monitoring data is adequate for its intended use. The programmatic Laboratory Quality Assurance Plan (LQAP) is the guidance document for all laboratories supporting agent demilitarization operations. The TOCDF Laboratory Quality Control Plan (LQCP) was prepared in accordance with the requirements of the LQAP.

22.11.2 Failure To Monitor

22.11.2.1 All of the monitoring identified in this plan must be operating and in control during processing in a given area or it will be considered a "Missed Monitoring" and will be reported as such. The following are exceptions:

22.11.2.2 During campaign change transition periods when monitors are being changed to a new campaign.

22.11.2.3 When a Temporary Change has been approved (see Paragraph 22.15.3).

22.11.2.4 When there are ACAMS and DAAMS monitoring a work area, and one or the other is off line for maintenance, repair or calibration, it will not be considered a "Missed Monitoring" as long as the co-located monitor is in control. If the ACAMS is offline for more than one and a half hours, the DAAMS becomes the primary monitor and therefore must be analyzed. This does not apply to the HVAC stack, common stack or ducts.

22.11.2.5 When a monitor is off line or out-of-control and processing has ceased, personnel have evacuated the area, or other investigative measures are taken, it will not be considered a "Missed Monitoring". Example: If an ACAMS is offline in a corridor and the area has been made off limits, it will not be considered a missed monitoring because mitigating measures have been taken. This does not apply to the HVAC stack, common stack or ducts.

22.12 NOTIFICATION PROCEDURES

22.12.1 The PDARS in the Control Room polls each ACAMS and stores the readings in a temporary computer file. A computer in the Control Room uses this file to access agent readings from each ACAMS. These readings may be displayed on demand in the Control Room and at the MSB. The ACAMS shall alarm at each location (and in the Control Room) when detected agent concentrations exceed set points. ACAMS that monitor areas under engineering control may not have a local alarm. (See Section 22.32.1) This is because the ACAMS would be constantly in alarm.

22.12.2 In the event of an alarm outside of engineering controls and category "C" areas (areas under engineering controls but agent is not expected e.g., observation corridors), the Control Room will notify the Monitoring Team Leader. This is done using either the plant public address system or telephone. The Team Leader or designated certified monitoring technician along with one other Monitoring person will respond by going to the location of the ACAMS that is in alarm. Monitoring personnel evaluate alarms by observing the chromatogram and troubleshooting for malfunctions and challenging an

ACAMS/DAAMS location with an agent standard to ensure that it is operating correctly. The Alarm Response Requirements are specified in Section 22.39. If the alarm is confirmed by DAAMS, appropriate corrective measures are taken. When it is believed that the area has been cleaned, the area monitor will determine if the corrective measure was adequate. If results show no agent (less than or equal to 0.2 TWA), normal operations will commence. All instructions originate in the Control Room, not the Laboratory.

22.12.3 The Control Room (CON) shall monitor the CAL ACAMS alarms and shall notify Monitoring per the requirements of Paragraph 22.12.2. If the CAL has an alarm, neat agent operations at the CAL shall be suspended. If the alarm causes TOCDF to fail to meet LCO requirements, waste feed shall cease for all furnaces at TOCDF.

NOTE

All ACAMS/DAAMS location alarms require analysis of the DAAMS tube(s). Even though the alarm may not confirm, DAAMS results above 0.2 Z must be reported to the CON. The DAAMS results, the ACAMS monitoring station number, and the ACAMS serial number will be maintained in the CAL database and will also be entered into the Operating Record by a control room operator. In addition, all alarms at the Pollution Abatement System (PAS) stack will require analysis of the DAAMS on all operating furnace ducts, and any furnace duct alarm will require analysis of the DAAMS at the PAS stack per the requirements specified in Section 22.39.

22.13 CONTROL LIMITS FOR ACAMS

22.13.1 All ACAMS are QC challenged daily except those that monitor the common stack and the duct VX ACAMS, which are challenged every 4 hours plus or minus 30 minutes in accordance with TE-LOP-524. The challenge results are collected electronically for all plant ACAMS connected to PDARS. The data for the CAL ACAMS and ACAMS not connected to PDARS are recorded manually and then archived. These data are used to assess the performance of individual units and the performance of the overall monitoring system. The TOCDF LQCP details the pass/fail criteria. The performance is tracked daily and any ACAMS that falls into the fail category is corrected or replaced.

22.14 MONITOR/MONITORING LOCATIONS

22.14.1 The monitors within the TOCDF site were placed in locations to maintain minimum distances to the actual sampling point while keeping the equipment out of hazardous areas. The actual sample point locations were identified in the monitoring plan drawings. Most of the work area sample points were identified by a team (BATTELLE, EG&G, SAIC, ARMY) observing room air flow patterns. For the actual monitoring locations at TOCDF, see Appendix A and the associated drawings.

22.15 MONITORING PLAN

22.15.1 List of Monitors

22.15.1.1 Appendix A outlines the monitoring stations for operations of the TOCDF site except for the perimeter monitors. The perimeter is the responsibility of CAMDS.

22.15.2 LCOs

22.15.2.1 The monitors identified for a given campaign must be operating at all times and are considered to be Limiting Conditions of Operations (LCOs). In the event that a monitor is not capable of operating, immediate corrective actions will be taken. (See Paragraph 22.15.3).

22.15.3 Temporary Changes

22.15.3.1 Temporary changes may be made to the requirements of this plan by following the normal TOCDF procedures, which provide proper approvals and documentation. This will allow for adding to, reducing the number of, or changing the configuration of agent monitors on a temporary basis. The Permittee shall notify the Executive Secretary orally of any reduced monitoring applicable to this Attachment prior to implementation.

22.15.4 Additional Support

22.15.4.1 Occasionally support from DCD or CAMDS is required for additional monitoring support. This may include the use of Real Time Analytical Platform (RTAPs) for increased area monitoring, or an upset condition, and the operation of DAAMS station GPL001.

22.16 SOLID AND LIQUID SAMPLING

22.16.1 Attachment 2, Waste Analysis Plan (WAP), which is a part of the Resource Conservation and Recovery Act (RCRA) permit, provides the details of all solid and liquid material to be sampled prior to disposal.

22.17 EQUIPMENT

22.17.1 The following is a discourse of the types of equipment used for agent monitoring:

22.17.1.1 ACAMS

22.17.1.1.1 This is a near-real-time monitor designated as the ACAMS. The ACAMS is configured for the appropriate detection level and the current agent(s) locations. The ACAMS is equipped with remote, audible, and visible alarm systems. The ACAMS samples air during a preset sample period. Agent present in the sample air stream is collected on a solid sorbent bed during the sample period for gas chromatographic (GC) analysis. The results of the GC analysis of the sampled air are displayed on the front panel of the instrument. A permanent record of the chromatogram and the agent concentration is recorded on a strip-chart. The ACAMS produces an audible and visible alarm when the agent concentration level is beyond the preset alarm level. The PDARS records the alarm and the concentration. In the case of the common stack and furnace duct ACAMS; the chromatogram is also recorded by the PDARS. The ACAMS is used to detect process upsets and is located in areas where concentrations of agents are of concern or where rapid response is required to allow personnel to work in lower levels of protective dress.

22.17.1.1.2 During the time the ACAMS is connected to the spool sample line, the DAAMS that was associated with the original ACAMS becomes the primary monitor for that location. This

means that the DAAMS tubes must be analyzed, rather than serving the function of being confirmation DAAMS that only get analyzed in the event of an ACAMS alarm. Additionally, if the ACAMS alarms while connected to the spool, there are no DAAMS tubes to serve the confirmation function. If there are readings on the ACAMS while it is in the spool mode, it must be assumed to be agent.

22.17.1.1.3 The ACAMS is an automatic, semi-continuous air monitoring system with the ability to detect and report the concentration levels of chemical agents in the air at either low levels or high levels depending on its monitoring configuration.

22.17.1.1.4 ACAMS Operating Levels:

- IDLH - Immediately Dangerous to Life and Health
- TWA - Time Weighted Average
- ASC - Allowable Stack Concentration
- GLD - Gross Level Detector (HD Only)
- MPL - Maximum Permissible Limit
- ECL - Engineering Control Level

22.17.2.1 DAAMS

22.17.2.2 An additional monitoring system used is the DAAMS. DAAMS involve passing sampled air through a sorbent bed where any agent would be collected. The sample periods are determined by P&A study results and will be in the range of three minutes to eight hours. DAAMS analysis is performed using a Class 1 quantitative method. However, when DAAMS are used in conjunction with an ACAMS, the results are used to confirm or not confirm the presence of agent. If an ACAMS is not monitoring correctly, the DAAMS tubes become the primary monitor and must be collected and analyzed. DAAMS samples provide independent confirmation of positive ACAMS readings and a historical record of monitoring in areas not monitored by ACAMS.

22.17.2.2.1 DAAMS tubes shall use a bar code system to track the specific station and agent of each tube. All DAAMS stations shall be reported at the limit of quantification of 0.2 Z (e.g., 0.2 TWA).

22.17.3 Sample Lines

22.17.3.1 The agent sampling lines are heated to aid in the transmission of the sample. They are designed to allow the removal of individual sampling tubes without removal of the entire heated sampling assembly. Appendices C & D show the configuration of the sampling assembly. Most of the sample lines were fabricated at TOCDF. They consist of Teflon sample line with self-regulating heat tape. In special cases a temporary sample line may not be heat traced. In these cases the line is challenged with agent to prove that it will pass a sample without the heat.

22.17.4 Sample Lines (Suffixed with “S”)

22.17.4.1 Monitoring stations whose station number is suffixed by an "S" (spool) are to be used for special or short term monitoring only. The purpose of the “S” stations is to allow monitoring in specific locations that don't have a regularly assigned ACAMS. The station equipment consists of a sample line only.

22.17.4.2 When the monitoring is performed, an adjacent ACAMS will be connected to the “S” sample line. In some cases the lines are arranged on a spool to allow it to be reeled out and moved to the point that needs sampling. The ACAMS that are used in conjunction with the “S” sample lines have switches (or PDARS software) that designate the station in use. The purpose of the switch is to identify the correct monitoring location to

PDARS. This causes the ACAMS data to be cataloged to the correct sampling point and therefore provide accurate traceablity of monitoring results.

NOTE

All non-toxic sample lines shall be challenged at the distal end of the sampling system for VX and GB at a rate of 20% per month on a rotating basis. The VX conversion pads will be changed on a daily basis.

22.17.5 Sample Probe for Airlocks

22.17.5.1 A special probe is used for GB at the distal end of the sample lines to monitor workers who are exiting toxic areas. The purpose of the probe is to avoid pulling water into the ACAMS along with the sample. The probe is designed such that if it is dropped on the wet floor it will allow sample air passage but not water, unless the probe is totally submerged. VX monitoring consists of two silver fluoride conversion pads located at the distal end of the sample line. Due to the moist conditions of the decontamination area in the airlock, the conversion pads will be changed prior to decontamination verification. For toxic area airlocks, conversion pads shall be changed in accordance with 22.17.6.10.

22.17.6 Silver Fluoride Pads

22.17.6.1 There are six styles or types of conversion pad assemblies. They are designed to place the conversion pads in the sample stream such that the pads are exposed to the sample stream and be capable of converting a quantifiable amount of VX to the G-analog of VX. Without the conversion, the monitoring equipment will not detect VX. All assemblies will contain at least two V/G Conversion pads held in place close to the sample input path. Additional pads do not aid or hinder the conversion efficiency.

22.17.6.2 The first is a Stack/Duct Probe Conversion Pad Assembly or Type 1 V/G CPA. Type 1 is a compression fitting that has conversion pads placed in the sample stream where the furnace effluent is drawn into the probe. The fitting is attached to the probe by means of a compression fitting.

22.17.6.3 The second type is a LSS Air Conversion Pad Assembly or Type 2 V/G CPA. Type 2 is an inline assembly containing V/G pads that are placed between the LSS air hose and the sampling manifold. The assembly has quick-connect fittings, compatible with the LSS Air System, on both ends making it easy to install and change-out.

22.17.6.4 The third type is a Swagelok® Conversion Pad Assembly or Type 3 V/G CPA. This CPA fitting is a Swagelok® compression nut containing the conversion pads. The nut can be attached to several different types of Swagelok® fittings connecting the CPA to the sample line.

22.17.6.5 The fourth type is the ONC Monitor Conversion Pad Assembly or Type 4 V/G CPA. It is a quick-connect containing the V/G pads that attaches to the monitor sample line. The assembly then attaches to the ONC monitoring port.

22.17.6.6 The fifth type is an alternate LSS fitting that may be used to monitor LSS air change manifolds.

22.17.6.7 The sixth type of Conversion Pad Assembly is the MPF Discharge Airlock (DAL) Probe CPA. The MPF DAL CPA is a set of V/G pads compressed between two Teflon tube spacers. This assembly is attached to the Teflon sample line through a stainless cooling probe. The drawing is located in Appendix J (VX MPF Discharge Airlock Air-Cooled Sampling Probes).

22.17.6.8 In order for VX to transfer down a monitoring sample line the vapors need to be converted from VX to G-analog, a derivative of VX that closely resembles GB. To facilitate this conversion, silver fluoride impregnated pads, or V to G pads are used.

22.17.6.9 The stack and duct ACAMS/DAAMS conversion pads shall be replaced every 4 hours plus or minus 30 minutes. The pads shall be challenged before replacement, so that the silver fluoride pads that have been in service are part of the challenge to ensure adequate transfer.

22.17.6.10 The toxic area ACAMS/DAAMS (IDLH, ECL, or TWA) conversion pads shall be changed each time a toxic entry team enters into an area monitored by the toxic area ACAMS. One exception to this requirement would be if the team re-enters an area and the conversion pads had been previously changed during their entry.

22.17.6.11 Except for stations MON-378V and DUN-252V, non-toxic area TWA ACAMS and DAAMS conversion pads shall be changed daily. The ACAMS are challenged daily. The conversion pads associated with MON-378V and DUN-252V may be changed daily or each time an entry is made due to the access to these areas are infrequent and is controlled to both areas by lock and key. The sample line is challenged at the distal end at a rate of 20% per month.

22.17.6.12 The HVAC midbed, HVAC Vestibule and Toxic Area ACAMS may be challenged at the ACAMS instead of the distal end of the sample probe if the agent concentration was below 1.0 TWA for each agent reading. The conversion pads must be changed at a minimum of every 28 days for agent readings less than 1.0 TWA and weekly if each agent reading were at or above 1 TWA for VX.

22.17.6.13 Test data must be submitted and approved by the Executive Secretary to reduce monitoring requirements presented above.

22.17.6.14 All DAAMS conversion pad assemblies shall have the same corresponding change-out frequency at the monitoring levels specific in 22.17.6.9 through 22.17.6.13.

22.17.6.15 For LSS DAAMS Stations, the conversion pads must be changed at a minimum of every 28 days for agent readings less than 0.2 TWA. The LSS stations are decertified for use when an agent reading reaches 0.2 TWA or above. If agent is detected at or above 0.2 TWA see section 22.30.1.

22.18 TECHNICAL INFORMATION

22.18.1 The ACAMS can be configured to operate at TWA, ASC, ECL, IDLH or MPL. A longer sampling time is needed at the common stack and furnace ducts for VX (6 minutes).

22.19 STACK CONFIGURATION

22.19.1 Agent monitoring of the furnace stack effluent consists of ACAMS and DAAMS.

22.19.2 ACAMS

22.19.2.1 There are three ACAMS assigned to monitor the common PAS stack for each agent (3 for GB, 3 for VX). Two of the ACAMS for each agent are on line constantly. Their operating cycles are staggered to allow one unit to be in the analysis mode while the other is sampling. This gives sampling 100% of the time. Each of these two ACAMS has a different GC column. Two columns are used to help differentiate actual alarms from false alarms. The different columns react differently to interferents but not to agent. If agent is present, both ACAMS will alarm. If an interferent is present only one of the ACAMS may alarm. In all cases a DAAMS analysis is used for alarm confirmation. The third ACAMS serves as a back-up unit when one of the other units is off-line for challenging or corrective action. The three ACAMS for each agent are linked to the PDARS individually. This allows QC data to be collected while an individual unit is off-line. An alarm is sounded in the CON if the ACAMS cycling does not provide 100% monitoring of the PAS stack for each agent.

22.19.3 DAAMS

22.19.3.1 There are three DAAMS tubes aspirating at all times for each agent (GB and VX). They are the primary tube, a confirmation tube, and a GC/MSD tube. A fourth tube, which is a QP, is also aspirated in accordance with the LQCP. The sampling equipment is designed such that a sample is being collected constantly, even when a set of tubes is being replaced. The stack and furnace duct DAAMS will have a “no-flow” audible alarm to warn operators when the DAAMS is not operating.

22.19.4 Dilution Air Flow Controllers

22.19.4.1 Both the ACAMS and DAAMS use dilution airflow controllers. They are designated as the ACAMS Dilution Air Flow Controller (ADAFC), which is shown in Appendix G and the DAAMS Dilution Air Flow Controller (DDAFC), which is shown in Appendices E and F. The purpose of the dilution flow controllers is to inject dry air into the sample stream to prevent the liquid in the sample from condensing in the sampling equipment, keeping the sample above the dew point. The dilution flow controllers are designed such that the flow control device has a feedback signal to a flow meter. This feedback signal causes the ratio of the sample flow to stay constant once the two are locked together. Therefore, the unit compensates for any interruptions in the sample flow and maintains the correct ratio. The agent concentration in the DAAMS tubes is calculated using the volume of sample air, not the dilution air. The same theory of operation holds true with the ACAMS. The ACAMS are calibrated disregarding the quantity of dilution air. The dilution air can be considered a carrier for the sample. The agent concentration is based on the volume of the sample. Additionally, the ACAMS has software that allows it to calculate agent concentrations even when there is a change in the sample flow rate. Since the flow ratio is controlled by the dilution flow controller and the ACAMS can compensate for flow changes, the two units in conjunction give accurate agent readings even when there are sample flow rate changes. The stack and duct ACAMS/DAAMS operate using a ratio of dilution air to sample of 92% to 8% for GB and 95% to 5% for VX.

22.20 ACAMS DATA COLLECTION

22.20.1 The plant ACAMS are integrated into the PDARS. The PDARS stores all readings taken by each ACAMS to a temporary computer file. From this file, a computer is able to compile trends from each ACAMS for up to 72 hours and, upon demand, display these trends to graphics screens in the Control Room and the MSB. Various automated reports are used to observe these trends to be used as a management tool to make improvements and determine the level of readiness of the overall ACAMS system. This temporary file is compressed to an archival file that becomes the permanent record of agent readings. From the archival file, the computer is able to trend each connected ACAMS for any desired time period. Results of all ACAMS QC challenges are electronically recorded and, additionally, they are manually recorded in the ACAMS logbook at each instrument. These results provide a basis for statistical analysis to assess performance and for reporting to regulatory agencies. The CAL and other areas in the plant as noted in Appendix A do not have PDARS, therefore, the ACAMS chart recorder and instrument log are used to record readings and QC data that are then archived.

22.21 DAAMS SYSTEM

22.21.1 The DAAMS sampling system is capable of collecting agent GB and VX by use of Chromosorb 106 and HD with Tenax sorbent beds. The sample is then analyzed using GC/FPD analysis techniques. The total volume of air sampled is calculated from the sampling time and the sample flow rate. Desorption of the DAAMS tube into a GC/FPD for analysis provides the total mass of agent collected. The average air concentration of agent is then calculated from this data. By increasing the sample time or flow rate, the average concentration sensitivity can be increased. DAAMS stations shall quantitate agent concentration at or above the LOQ (0.2 TWA) for both GB and VX.

22.22 BACKUP EQUIPMENT

22.22.1 The function of the ACAMS is to rapidly detect agent. Should a needed instrument fail, the first response is to troubleshoot and repair it in place. Should the estimated repair time be excessive (as determined by the CON) the ACAMS will be replaced with an ACAMS from the contingency stock.

22.22.2 Flexibility will be maintained with all of the monitoring systems in order to eliminate process downtime due to equipment failure.

22.23 MAINTENANCE

22.23.1 The Monitoring Technicians and Instrument Technicians have completed mandatory ACAMS training at the Chemical Demilitarization Training Facility (CDTF) and are qualified to maintain and operate ACAMS. The manufacturer’s manuals and LOPs provide necessary guidance.

22.24 START UP OF MONITORING

22.24.1 Agent monitoring in the TOCDF plant and the CAL will be initiated in each area as needed. A Monitoring Plan for each campaign must have approval of the PMCD Field Office. The monitoring identified in the "campaign specific" plan will be started in sufficient time to allow baseline data collection. The pre-operational survey for the

campaign shall include review of the plan and the baseline data. The information in this plan is the basis for all campaign specific plans.

22.25 SPECIAL ON-SITE CONTAINER (ONC) MONITORING

22.25.1 Special monitoring shall be required whenever an On-Site Container (ONC) or over pack-containing agent has remained in the Container Handling Building (CHB) for more than seven days. This is a RCRA requirement. The interior of the ONC or over pack will be monitored with a DAAMS or ACAMS. The determination of which to use is based on equipment availability and how fast the results are needed.

22.26 SUSPENSION OF MONITORING

22.26.1 When a portion of the plant, e.g., MPF, Deactivation Furnace System (DFS), etc., is not in operation, monitoring can be suspended for those work areas if the requirements stated in the TOCDF LQCP are met. To suspend monitoring of the furnace ducts see Paragraph 22.27.2.

22.27 FURNACE STACK AND DUCT MONITORING

22.27.1 Calibrating, Challenging, or Servicing

22.27.1.1 The ACAMS at monitoring locations PAS 702, PAS 703, PAS 704, and PAS 705 may be taken off-line during waste feed to challenge, calibrate, or service for up to one hour each operating day, midnight to midnight, provided at least two staggered ACAMS monitoring for each agent in the common stack are on-line. A standby ACAMS is located at each duct location to avoid exceeding the one-hour limit. The MPF and DFS ducts have both GB and VX ACAMS monitoring.

22.27.2 Suspended Monitoring (Furnace Ducts Only)

22.27.2.1 Monitoring of the furnace ducts leading to the common PAS stack may be suspended, if all three of the following requirements are met. First, agent feed has been suspended with the furnace and afterburner continuing at operating temperature for a minimum of one hour following the end of agent feed. Second, a confirmed agent reading at or above 0.5 ASC for VX and 0.2 ASC for GB is absent for a 24-hour period and Standing Operating Procedures (SOPs) are in place identifying procedures for furnace operation and isolation of contaminated hardware within the furnace system. Third, Project Manager for Chemical Demilitarization (PMCD) approves procedures isolating contaminated materials (e.g. piping, etc.) from the respective furnace and its PAS. The third condition may not be applicable if there are no contaminated materials in the furnace system (including the input airlock to the MPF). Furnace duct monitoring will resume 24 hours before the agent gun is installed in a LIC, or before waste feed commences in the DFS or Metal Parts Furnace (MPF). Furnace stack monitoring will not be suspended without PMCD and Executive Secretary approval.

22.28 MONITORING FOR AGENT FROM PAST CAMPAIGNS

22.28.1 Monitoring in Category A and B areas for past agent contamination may be discontinued when the airborne agent contamination for that area is less than 1.0 TWA over a 24-hour period, at a minimum temperature of 70° F, with the ventilation system operating at the approved flow rates. A confirmed agent reading at or above 1.0 TWA requires that the area must undergo additional decontamination.

22.29 BRINE REDUCTION AREA (BRA) STACK MONITORING

22.29.1 Air monitoring of the Brine Reduction Area (BRA) stack is not performed. If the BRA becomes operational, the waste feed liquid is analyzed for agent prior to processing in the BRA or shipping Off-Site for disposal.

22.30 LIFE SUPPORT SYSTEM (LSS) AIR HOSE MONITORING

22.30.1 The Life Support System (LSS) air hoses are monitored using DAAMS samples. All of the hoses on a given air manifold are sampled with two DAAMS tubes. If the analysis indicates agent at or above 0.2 TWA, the silver fluoride pads shall be changed and the hose shall not be used until corrective action has been made to the LSS hose and the agent level decreases below 0.2 TWA.

22.31 BREATHING ZONE MONITORING

22.31.1 The Army does not have a validated system to provide chemical agent breathing zone monitoring for each worker. At TOCDF, area monitors are located based on quantity and airflow so that their results are representative of personnel exposure within the limits of existing technology.

22.32 ACAMS ALARM HORN

22.32.1 There are cases where ACAMS have an alarm in the Control Room but there is no local alarm. This is a safety measure. There are areas that have frequent alarms but it does not mean that the workers in the area must mask. It is important that the workers do not become accustomed to ignoring ACAMS alarms. Some examples are: ONC ACAMS, Toxic Area ACAMS, and airlock ACAMS. In all of these cases an alarm does not indicate that the people in the location of the ACAMS need to mask. ACAMS that have the horn disconnected must have a sign at the ACAMS indicating such.

22.33 ACAMS ALARM LEVEL

22.33.1 The set point for the ACAMS agent alarms is specified in the monitoring station tables. Due to the design characteristics of the ACAMS and the software that operates the alarm, there may be slight variations in the actual alarm level for each ACAMS. The tolerance for the alarm level of 0.2 Z is 0.19 Z to 0.25 Z. For 0.5 Z, the tolerance is 0.49 Z to 0.55 Z. For alarm set points greater than 1.0 Z, the tolerance is plus or minus 5%.

22.34 PORTABLE ACAMS/DAAMS MONITORING TRAILERS

22.34.1 There are a minimum of two Portable Monitoring Trailers housing ACAMS and DAAMS at TOCDF. They are for special short-term monitoring to support activities such as: filter farm charcoal change-out and spray tank transporter sampling.

22.35 CARBON FILTERS ON ACAMS

22.35.1 In special circumstances, an ACAMS purpose is not to provide monitoring on a continuous basis for example: ACAMS for monitoring ONCs, and ACAMS for monitoring charcoal change-out at the Filter Farm. When these types of ACAMS are operating but not sampling the area they are intended for, a charcoal filter will be installed at the ACAMS to avoid confusing false positives.

22.36 MPF DISCHARGE AIRLOCK (MPF DAL) ACAMS/DAAMS

22.36.1 The ACAMS for the MPF Discharge Airlock (AL 468G and AL 468V) samples filtered air except when monitoring the discharge airlock. VX munitions or bulk containers that have been processed in the MPF will be monitored in the MPF DAL via high-temperature

or low-temperature monitoring. Low-temperature monitoring protocol requires the DAL to be cooled to less than 600° F prior to agent monitoring. High-temperature monitoring is defined as greater than 600° F.

22.36.2 All secondary wastes process will be monitored via low-temperature monitoring.

22.36.3 During monitoring, if the ACAMS alarms, the item is moved back into Zone 3 (or Zone2 if the MPF is in a two-zone operation) for additional processing time for a minimum of 15 minutes.

22.36.4 The Permittee has the option to perform low-temperature monitoring instead of high temperature monitoring on any munitions or bulk container.

22.36.5 Sample line challenges will be performed at 1.0 TWA and 0.2 TWA at a minimum of every 24±4 hours while processing for both ACAMS and DAAMS. The V/G conversion pad assemblies for both the ACAMS and DAAMS will be changed prior to monitoring each tray.

22.36.6 If low temperature monitoring occurs, ACAMS/DAAMS sample line challenges will be performed at 1.0 TWA prior to discharging the tray into the Cool-Down Area.

22.36.7 Spray Tanks and mine drums must be processed via low temperature monitoring until a monitoring plan specific to Spray Tanks and mine drums has been approved by the Executive Secretary.

22.36.8 MPF DAL maintenance of the sampling systems shall follow the procedure in Attachment 3 (Sampling, Analytical and QA/QC Procedures) for the ACAMS and DAAMS systems.

22.37 ACAMS/DAAMS AT EQUIPMENT HYDRAULIC MODULE

22.37.1 The ACAMS and DAAMS at the Equipment Hydraulic Module (EHM) Station #EHM 354, only monitors the EHM when personnel are inside the EHM. An alarm light is installed inside the EHM for personnel safety. If the ACAMS and DAAMS are not on-line, the alarm light is on, and personnel are denied entry into the EHM until they are put on-line.

22.38 FUGITIVE EMISSIONS MONITORING

22.38.1 If a leak is discovered in any equipment in an agent processing area at TOCDF, that leak shall be monitored for agent using an ACAMS. The method used for this monitoring will be a modified Method 21 from 40 CFR, Part 60 using an ACAMS for agent.

Method Requirements	TOCDF Capabilities	Mitigation/ Justification
A portable instrument will be used to monitor leaks for Volatile Organic Compounds (VOCs)	The ACAMS will be used. This is a portable monitor that is configured for the specific VOC that TOCDF is monitoring for (agent).	N/A
The VOC instrument detector shall respond to the compounds being processed, and both the linear response range and measurable range of the instrument shall encompass the leak concentration.	The ACAMS meets this criterion, being calibrated with the compound of interest. It also has an unlimited detection range from 0.2 Z on up.	N/A

Method Requirements	TOCDF Capabilities	Mitigation/ Justification
The scale of the instrument meter shall be readable to +/- 2.5% of the specified leak definition concentration when performing a no detectable emission survey.	The ACAMS meter readout is digital, so the concentration is displayed with easy to read numbers.	N/A
The instrument shall be equipped with an electrically driven pump to insure that a sample is provided to the detector at a constant flow rate. The rate will be 0.10 to 3.0 LPM, measured at the probe tip.	The ACAMS complies with this requirement, with a normal flow rate of 0.80 to 1.2 LPM.	N/A
The instruments shall be intrinsically safe, as defined by U.S.A. standards for use in any explosive atmospheres that may be encountered in its use.	The ACAMS meets this requirement, and is used throughout TOCDF in all types of environments.	N/A
The instrument shall be equipped with a probe or probe extension for sampling not to exceed ¼ inch outside diameter, with a single opening for admission of a sample.	The ACAMS meets this requirement ¼ inch outside diameter is the standard for ACAMS sample lines and probes.	N/A
The instrument response factors for the VOC to be measured shall be less than 10. The response factor is the ratio of the known concentration of a VOC compound to the observed meter reading when measured using an instrument calibrated with the specified reference compound.	The ACAMS meets this criterion.	N/A
The instrument response time shall be equal to or less than 30 seconds, with all sampling equipment connected and operating.	The ACAMS has a response time of 5 minutes (300 seconds), and does not meet this criterion. But, this is a special application, sampling for a specific compound.	The ACAMS is the best available technology for agent sampling. Since the ACAMS must collect a sample before analysis, the 5- minute response time is as fast as TOCDF can get, while still maintaining accurate results.
The calibration precision must be equal to or less than 10 percent of the calibration gas value.	The ACAMS meets this criterion, except that the ACAMS uses a liquid calibration standard. By TOCDF procedure the after calibration challenge must be +/- 10	N/A

Method Requirements	TOCDF Capabilities	Mitigation/ Justification
	% of the target value.	

NOTE

The challenge, calibration and operation of the ACAMS will comply with TOCDF Laboratory Operating Procedure (LOP) 524 in Attachment 3 (Sampling and Analytical Procedures)

22.39 ALARM RESPONSE REQUIREMENTS

22.39.1 Common Stack Alarm For VX or GB

22.39.1.1 If the ACAMS alarms at or above 0.2 ASC, the site shall mask and a RCRA (AWFCO) shall be initiated for all furnaces/incinerators. Monitoring personnel shall be deployed. DAAMS tubes shall be pulled and analyzed on the stack and ducts of all furnaces/incinerators.

22.39.2 Duct (MPF/DFS/LIC1/LIC2) Alarms for VX or GB

22.39.2.1 If the ACAMS alarms at or above 0.2 ASC for GB or 0.5 for VX, a RCRA (AWFCO) for that furnace/incinerator shall be initiated. Monitoring personnel shall be deployed to investigate the alarm. DAAMS tubes shall be pulled and analyzed if any alarm is at 0.2 ASC or above for GB or 0.5 ASC or above for VX.

22.39.3 HVAC Stack Alarm for VX or GB

22.39.3.1 If the ACAMS alarms at or above 0.2 TWA, the site shall mask. Monitoring personnel shall be deployed. DAAMS tubes shall be pulled and analyzed.

22.39.3.2 If agent is confirmed, no additional agent may be brought into the plant without Executive Secretary approval.

22.39.4 Workplace Monitoring for VX (Categories C and D Areas)

22.39.4.1 If the ACAMS alarms at 0.5 TWA or above, personnel shall mask the site and DAAMS tubes shall be pulled and analyzed.

22.39.5 Workplace Monitoring for GB (Categories C and D Areas)

22.39.5.1 If the ACAMS alarms at or above 0.2 TWA, mask the site. Monitoring personnel shall be deployed to investigate the alarm. DAAMS tubes shall be pulled and analyzed.

APPENDIX A

AGENT MONITORING PLAN

FOR VX MUNITIONS AND BULK CONTAINERS

AND

GB and VX SECONDARY WASTE

AGENT MONITORING PLAN

Explanation of Column Titles

Station Number

The station number was assigned by Monitoring in accordance with the Monitoring Station Numbering Sheet. This is the number used by PDARS. The letters are used to identify the area monitored, i.e., AL for Airlock, OBS for Observation Corridor. The numbers are specific to the geographic location being monitored. This number cannot be reassigned to any other location due to the restraints caused by the 40-year record-keeping requirement. When a station number is suffixed by an S, it indicates that the sample line is movable to various sample points. The S indicates spool. The station number is suffixed to indicate the agent for that station. G for GB and V for VX.

ACAMS/DAAMS Tag Number

This number identifies the tag number for the ACAMS and/or DAAMS specific to that station number. If an ACAMS or DAAMS is removed for repair and a new ACAMS or DAAMS is installed at that station, the tag number will stay with the new ACAMS/DAAMS. This is to prevent the need to update the Monitoring Plan each time maintenance is required. Temporary DAAMS are installed with an assigned sample number instead of a tag number. Monitoring will track the ACAMS/DAAMS being repaired using the unit's serial number.

Unit Location

This designates the detector's physical location by room, floor plan number, and the drawing number (from the attached Monitoring Plan drawings).

Area Monitored

This designates the geographic location being monitored by room and floor plan number.

Power Type

UPS - Battery backup used on ACAMS. DAAMS using the same station number will be connected to UPS.

SPS - Commercial power backed up by an emergency generator. DAAMS only (and possibly DAAMS located on a cart with an ACAMS/DAAMS, but with its own station number) will use the Secondary Power (Distribution) System (SPS). The heat trace cable for all sample lines are on SPS power.

Sample Point Hazard Category

A through E, with "A" being a room where liquid agent is likely to be present to "E" where no agent will be found**.** See Terminology Section for complete definition.

Monitoring Level

Indicates the ACAMS or DAAMS monitoring level or sensitivity of the monitor. In other words if TWA is listed the ACAMS will be operating in the TWA mode and the DAAMS analysis will be performed on an instrument that is operating in the TWA range. When ECL is listed, the location is being monitored at a more sensitive level than required by PMCD direction. In other words, if ECL/TWA is listed, the monitors are in the TWA mode but are more sensitive than required by the PMCD Monitoring Concept Plan. The agent concentrations for each monitoring level are specified in the PMCD Monitoring Concept Plan.

Alarm Level

The alarm level at the ACAMS station is the same as it is in the Control Room. The alarm level shown is in terms of the monitoring level shown in the previous column. The alarm levels are set below threshold levels to allow action to be taken to avoid exceeding threshold levels. The threshold level for an unmasked worker is one TWA; the alarm level is 0.2 TWA for GB and 0.5 TWA for VX. The threshold level for M2C (formerly Level B) gear is 50 TWA; the alarm level is 40 TWA. The threshold level for A1 (known as DPE) is 500 IDLH; the alarm level is 400 IDLH.

The alarm level starts a course of actions. The specific requirements are identified in Section 22.39 (Alarm Response Requirements). An alarm located in toxic areas, filter mid-beds, inside ONCs or other closed containers do not require the contingency procedures to be implemented.

Sample Line Length

Lengths of the sample lines are listed with an accuracy of ±20%.

DAAMS Mode

The mode is an indication of the purpose of the DAAMS. Examples are:

ACAMS Confirm: The DAAMS is used to confirm an ACAMS reading in the event of an alarm.

Historical: The DAAMS is used in an area that is very unlikely to have agent contamination and is to provide evidence that there hasn't been any detectable concentration in that area.

Historical Systemization: Used to investigate interferents before hot start.

Primary DAAMS: In this case the DAAMS is the only agent monitor, in cases such as LSS air monitoring.

Comments

Additional information as needed.

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
GPL 001	N/A	323	CHB WEST UNLOAD RM 96-105 07-ID-28-005-1-B4	NORTH WEST TOCDF PERIMETER	SPS	N/A	GPL	N/A	5’	PRIMARY	THIS STATION IS OPERATED BY CAMDS
CHB 104V	218	218	CHB UNPACK AREA 02-201 01-ID-28-001-9-D2	UNPACK AREA RM 02-201	UPS	C	TWA	0.5	69'	ACAMS CONFIRM	
CHB 104 G	N/A	384	CHB UNPACK AREA 02-201 01-ID-28-001-9-D2	UNPACK AREA RM 02-201	SPS	C	TWA	N/A	69'	HIST	
CHB 107AV	229	N/A	CHB UNPACK AREA 02-201 01-ID-28-001-9-D2	UPA-ONC RM 02-201	UPS	N/A	TWA	0.5	65'	N/A	NOTES 5
CHB 107BV	289	N/A	CHB UNPACK AREA 02-201 01-ID-28-001-9-D2	UPA-ONC RM 02-201	UPS	N/A	TWA	0.5	65'	N/A	MAY BE USED IN CONJUNCTION WITH CHB 107A TO INCREASE PRODUCTION NOTES 5
CHB 152V	173	143	EAST STORAGE 96-102 07-ID-28-005-C1	EAST UNLOAD RM 96-101	UPS	D	TWA	0.5	25’	ACAMS CONFIRM	
CHB 153V	178	147	WEST STORAGE 96-104 07-ID-28-005-1-C4	WEST UNLOAD RM 96-105	UPS	D	TWA	0.5	45’	ACAMS CONFIRM	
CHB 155V	174	144	E CONT STORAGE 96-102 07-ID-28-005-1- C1	EAST STG RM 96-102	UPS	D	TWA	0.5	90'	ACAMS CONFIRM	
CHB 156V	177	146	W CONT STORAGE 96-104 07-ID-28-005-1-C3	WEST STG RM 96-105	UPS	D	TWA	0.5	60'	ACAMS CONFIRM	
UPA 203V	125	125	UPA 02-214 01-ID-28-001-9-C3	ECR1 FEED CONVEYORS RM 02-214	UPS	C	TWA	0.5	55'	ACAMS CONFIRM	ACAMS/DAAMS FOR ROCKET FEED TABLE OR BYPASS LINE “A”

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
UPA 204V	120	122	UPA 02-214 01-ID-28-001-9-C3	UPA RM 02-214	UPS	C	TWA	0.5	24'	ACAMS CONFIRM	
UPA 204VS	120	N/A	UPA 02-214 01-ID-28-001-9-C3	RM 02-214	UPS	N/A	TWA	0.5	100'	N/A	SAME ACAMS AS UPA 204V Note 2
UPA 204G	N/A	385	UPA 02-214 01-ID-28-001-9-C3	RM 02-214	SPS	N/A	TWA	N/A	24’	HIST	
UPA 205V	122	121	CHB/UPA 02-201 01-ID-28-001-9-C2 UNDER FRESH AIR DUCT	UPA RM 02-214	UPS	C	TWA	0.5	30'	ACAMS CONFIRM	
UPA 205VS	122	N/A	CHB/UPA 02-201 UNDER DUCT 01-ID-28-01-9-C2	RM 02-214	UPS	N/A	TWA	0.5	100'	N/A	SAME ACAMS AS UPA 205V Note 2
UPA 207V	127	127	UPA 02-214 01-ID-28-001-9-C3	ECR2 FEED CONVEYORS RM 02-214	UPS	C	TWA	0.5	85'	ACAMS CONFIRM	ACAMS/DAAMS FOR ROCKET FEED TABLE OR BYPASS LINE “B”
ECV 208V	232	N/A	UPA 02-214 01-ID-28-001-9-C2	ECV RM 04-213	UPS	A/B	TWA/ ECL	40	100'	N/A	
AL 211V	326	N/A	UPA 02-214 01-ID-28-001-9-C2	ECV AIRLK A	UPS	A/B	TWA/ ECL	0.5	45’	N/A	
LSS 212G/V	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9-C4	MUN CORR 05-210 LSS 22A	NOT REQUIRED	N/A	TWA	N/A	40'	PRIMARY	Note 12
LSS 213G/V	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9-C4	MUN CORR 05-210 LSS 22B	NOT REQUIRED	N/A	TWA	N/A	25'	PRIMARY	Note 12
AL 214V	327	N/A	UPA 02-214 01-ID-28-001-9-C2	ECV AIRLK B	UPS	A/B	TWA/ECL	0.5	100’	N/A	
LSS 215G/V	N/A	PORTABLE	OBS COR 09-204 01-ID-28-001-9-C4	MUN CORR 05-210 LSS 38A	NOT REQUIRED	N/A	TWA	N/A	23'	PRIMARY	Note 12
LSS 216G/V	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9-C3	UPA 02-214 LSS 41A	NOT REQUIRED	N/A	TWA	N/A	2'	PRIMARY	Note 12

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
LSS 217 V/G	N/A	PORTABLE	OBS COR 09-204 01-ID-28-001-9-C-4	DPE SUIT SEALER 09-204 LSS 21	NOT REQUIRED	N/A	TWA	N/A	10’	PRIMARY	NOTE 12
LSS 218G/V	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9-D4	AIRLK "B" RM 06-220 LSS 22C	NOT REQUIRED	N/A	TWA	N/A	17'	PRIMARY	Note 12
AL 221V	157	N/A	OBS COR 09-204 01-ID-28-001-9-C4	AIRLK "B" RM 06-220	UPS	B	TWA/ECL	0.5	70'	NA	
AL 221G	382	N/A	OBS COR 09-204 01-ID-28-001-9-C4	AIRLK "B" RM 06-220	UPS	B	TWA/ECL	0.2	70’	N/A	
AL 222V	147	N/A	OBS COR 09-204 01-ID-28-001-9-C4	AIRLK "A" RM 06-221	UPS	A	TWA/ECL	40	70'	N/A	
AL 222G	383	N/A	OBS COR 09-204 01-ID-28-001-9-C4	AIRLK "A" RM 06-221	UPS	A	TWA/ECL	40	70'	N/A	
DUN 252V	175	131	CHILLER ROOM 20-129 01-ID-28-001-4-C3	DUN LIFT 07-131 2nd FLOOR UNDER DUN	UPS	C	TWA	0.5	24’	ACAMS CONFIRM	Note 21
MER 254V	328	104	MER 20-133 01-ID-28-001-3-D2	MER RM 20-133	UPS	D	TWA	0.5	67'	ACAMS CONFIRM	
LSS 255G/V	N/A	PORTABLE	MER 20-133 01-ID-28-001-3-D2	LSS AFTER AIR DRYERS RM 20-133	NOT REQUIRED	N/A	TWA	N/A	N/A	PRIMARY	Note 12
LSS 256G/V	N/A	PORTABLE	CHILLER ROOM 20-129 01-ID-28-001-4-B4 (ABOVE DOOR)	STAIR WAY #1 RM 35-128 LSS 21A	NOT REQUIRED	N/A	TWA	N/A	23'	PRIMARY	Note 12
DFS 257V	119	103	MER 20-133 01-ID-28-001-3-D2	AIRLOCK EGRESS RM16-135	UPS	C	TWA	0.5	60'	ACAMS CONFIRM	
CYC 258G	330	326	PAS 01-ID-28-001-3-D1	DFS CYCLONE BIN	UPS	B	TWA	0.2	9'	ACAMS CONFIRM	NOTES 7, 13 and 20
CYC 258V	330	326	PAS 01-ID-28-001-3-D1	DFS CYCLONE BIN	UPS	B	TWA	0.2	9'	ACAMS CONFIRM	NOTES 7, 13 and 20
LSS 259G	N/A	PORTABLE	MER 01-ID-28-001-3-D2	DFS ROOM 16-136 LSS 48C	N/A	N/A	N/A	N/A	73’	PRIMARY	Note 12

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
LSS 259V	N/A	PORTABLE	MER 01-ID-28-001-3-D2	DFS ROOM 16-136 LSS 48C	N/A	N/A	N/A	N/A	73’	PRIMARY	Note 12
CYC 260G	330	326	PAS 01-ID-28-001-3-D1	DFS CYCLONE BIN ENCLOSURE	UPS	C	TWA	0.2	9'	ACAMS CONFIRM	NOTES 7, 13 and 20
CYC 260V	330	326	PAS 01-ID-28-001-3-D1	DFS CYCLONE BIN ENCLOSURE	UPS	C	TWA	0.2	9'	ACAMS CONFIRM	NOTES 7, 13 and 20
LSS 265G	N/A	PORTABLE	LSS AIR MANIFOLD RM 09-216 01-ID-28-001-8-D3	LSS AIR MANIFOLD RM 09-216	NOT REQUIRED	N/A	TWA	N/A	10’	PRIMARY	Note 12
LSS 265V	N/A	PORTABLE	LSS AIR MANIFOLD RM 09-216 01-ID-28-001-8-D3	LSS AIR MANIFOLD RM 09-216	NOT REQUIRED	N/A	TWA	N/A	10’	PRIMARY	Note 12
MUN 302V	133	N/A	OBS CORR RM 09-204 01-ID-28-001-9-A4	MUN CORR RM 05-210	UPS	A/B	ECL/ TWA	40	120'	N/A	
OBS 303V	117	154	OBS CORR RM 09-204 01-ID-28-001-9-B4	OBS CORR RM 09-204	UPS	C	TWA	0.5	35'	ACAMS CONFIRM	
OBS 303G	N/A	383	OBS CORR RM 09-204 01-ID-28-001-9-B4	OBS CORR RM 09-204	SPS	C	TWA	N/A	35’	HIST	
LSS 304G	N/A	PORTABLE	OBS COR 09-204 01-ID-28-001-9-B4	MUN CORR RM 05-210 LSS 23A	NOT REQUIRED	N/A	TWA	N/A	17'	PRIMARY	Note 12
LSS 304V	N/A	PORTABLE	OBS COR 09-204 01-ID-28-001-9-B4	MUN CORR RM 05-210 LSS 23A	NOT REQUIRED	N/A	TWA	N/A	17'	PRIMARY	Note 12
LSS 305G	N/A	PORTABLE	OBS COR 09-204 01-ID-28-001-9-B4	MUN CORR RM 05-210 LSS 26A	NOT REQUIRED	N/A	TWA	N/A	87'	PRIMARY	Note 12
LSS 305V	N/A	PORTABLE	OBS COR 09-204 01-ID-28-001-9-B4	MUN CORR RM 05-210 LSS 26A	NOT REQUIRED	N/A	TWA	N/A	87'	PRIMARY	Note 12
LSS 306G	N/A	PORTABLE	OBS COR 09-204 01-ID-28-001-9-A4	MUN CORR RM 05-210 LSS 25A	NOT REQUIRED	N/A	TWA	N/A	100'	PRIMARY	Note 12
LSS 306V	N/A	PORTABLE	OBS COR 09-204 01-ID-28-001-9-A4	MUN CORR RM 05-210 LSS 25A	NOT REQUIRED	N/A	TWA	N/A	100'	PRIMARY	Note 12

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
LSS 307G	N/A	PORTABLE	OBS COR 09-207 01-ID-28-001-9-A3	ECV RM 04-213 LSS 25B	NOT REQUIRED	N/A	TWA	N/A	30'	PRIMARY	Note 12
LSS 307V	N/A	PORTABLE	OBS COR 09-207 01-ID-28-001-9-A3	ECV RM 04-213 LSS 25B	NOT REQUIRED	N/A	TWA	N/A	30'	PRIMARY	Note 12
LSS 309G	N/A	PORTABLE	OBS COR 09-203 01-ID-28-001-8-A4	MUN COR 05-210 36C	NOT REQUIRED	N/A	TWA	N/A	100’	PRIMARY	Note 12
LSS 309V	N/A	PORTABLE	OBS COR 09-203 01-ID-28-001-8-A4	MUN COR 05-210 36C	NOT REQUIRED	N/A	TWA	N/A	100’	PRIMARY	Note 12
LSS 310 G	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9	UPA RM 02-214 LSS 44B	NOT REQUIRED	N/A	TWA	N/A	1’	PRIMARY	Note 12
LSS 310 V	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9	UPA RM 02-214 LSS 44B	NOT REQUIRED	N/A	TWA	N/A	1’	PRIMARY	Note 12
LSS 314G	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9-D3	MUN CORR RM 05-210 LSS 26B	NOT REQUIRED	N/A	TWA	N/A	61'	PRIMARY	Note 12
LSS 314V	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9-D3	MUN CORR RM 05-210 LSS 26B	NOT REQUIRED	N/A	TWA	N/A	61'	PRIMARY	Note 12
LSS 316G	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9-B2	ECV RM 04-213 LSS 30A	NOT REQUIRED	N/A	TWA	N/A	35'	PRIMARY	Note 12
LSS 316V	N/A	PORTABLE	UPA 02-214 01-ID-28-001-9-B2	ECV RM 04-213 LSS 30A	NOT REQUIRED	N/A	TWA	N/A	35'	PRIMARY	Note 12
MUN 317V	322	N/A	OBS COR 09-207 01-ID-28-001-8-C3	MUN COR 05-210	UPS	A/B	TWA/ ECL	40	100’	N/A	SAMPLE LINE RELOCATED AS NEEDED
ECR 320V	329	N/A	OBS COR 09-204 01-ID-28-001-9-B4	ECR “A” RM 03-211	UPS	A	ECL/TWA	40	100’	N/A	SAMPLE LINE RELOCATED AS NEEDED
ECR 321V	105	N/A	OBS COR 09-204 01-ID-28-001-9-B4	ECR “B” Room RM-03-212	UPS	A	TWA/ECL/IDLH	40/40/400	80’	N/A	

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ECR 321G	336	N/A	OBS COR 09-204 01-ID-28-001-9-B4	ECR "B" Room RM-03-212	UPS	A	TWA/ECL	40	80'	N/A	
LSS 318G	N/A	PORTABLE	OBS COR 09-203 01-ID-28-001-8-A4	MUN COR 05-210 34D	NOT REQUIRED	N/A	TWA	N/A	80'	PRIMARY	Note 12
LSS 318V	N/A	PORTABLE	OBS COR 09-203 01-ID-28-001-8-A4	MUN COR 05-210 34D	NOT REQUIRED	N/A	TWA	N/A	80'	PRIMARY	Note 12
TOX 349V	423	N/A	OBS COR 09-142 01-ID-28-001-2-C4	TOXIC CUBICLE 11-141	UPS	A	TWA/ECL/ IDLH	40/40/400	67'	N/A	
TOX 349G	424	N/A	OBS COR 09-142 01-ID-28-001-2-C4	TOXIC CUBICLE 11-141	UPS	A	TWA/ECL/ IDLH	40/40/400	67'	N/A	
DFS 350V	126	N/A	MER 20-133 01-ID-28-001-3-D2	DFS ROOM RM 16-136	UPS	B	ECL/TWA	40	75'	N/A	
AL 351V	316	325	OBS COR 09-142 01-ID-28-001-2-C4	AIRLK "C" RM 06-139	UPS	C	TWA	0.5	30'	ACAMS CONFIRM	
AL 351G	391	442	OBS COR 09-142 01-ID-28-001-2-C4	AIRLK "C" RM 06-139	UPS	C	TWA	0.2	30'	ACAMS CONFIRM	
HDC 353 G/V	339	N/A	MER 20-133 01-1D-28-001-3-D2	HDC COLLECTION BIN	UPS	B	TWA	0.2	80'	N/A	Notes 5, 18 and 20
EHM 354V	104	111	OBS COR 09-142 01-ID-28-001-2-C2	EHM RM 18-138	UPS	B	ECL/ TWA	0.5	52'	ACAMS CONFIRM	Note 11
EHM 355V	149	N/A	OBS COR 09-142 01-ID-28-001-2-C3	AIRLOCK AB RM 06-137	UPS	B	TWA	0.5	56'	N/A	DPE EGRESS
EHM 355G	362	N/A	OBS COR 09-142 01-ID-28-001-2-C3	SDS GLOVEBOX & DFS "B" AIRLOCK	UPS	N/A	TWA	0.2	100'	N/A	
EHM 355GS	362	N/A	OBS COR 09-142 01-ID-28-001-2-C3	SDS GLOVEBOX & DFS "B" AIRLOCK	UPS	N/A	TWA	0.2	100'	N/A	SAME ACAMS AS EHM 355G
EHM 355VS	149	N/A	OBS COR 09-142 01-ID-28-001-2-C3	SDS GLOVEBOX & DFS "B" AIRLOCK	UPS	N/A	TWA	0.5	100'	N/A	SAME ACAMS AS EHM 355V

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SDS 356V	216	N/A	OBS COR 09-142 01-ID-28-001-2-C3	SDS RM 21-140	UPS	A	TWA/ECL/ IDLH	40/40/400	100'	N/A	
LSS 358 G/V	N/A	PORTABLE	OBS COR 09-142 01-ID-28-001-2-C3	BSA RM 17-146 LSS 4A	NOT REQUIRED	N/A	TWA	N/A	36'	PRIMARY	Note 12
OBS 359V	108	113	OBS COR 09-142 01-ID-28-001-2-C3	OBS CORR RM 09-142	UPS	C	TWA	0.5	24’	ACAMS CONFIRM	
OBS 359G	N/A	379	OBS COR 09-142 01-ID-28-001-2-C3	OBS CORR RM 09-142	SPS	C	TWA	N/A	24’	HIST	
LSS 360 G	N/A	PORTABLE	OBS COR 09-142 01-ID-28-001-2-C4	MUN CORR RM 05-153 LSS 4B	NOT REQUIRED	N/A	TWA	N/A	33’	PRIMARY	Note 12
LSS 360 V	N/A	PORTABLE	OBS COR 09-142 01-ID-28-001-2-C4	MUN CORR RM 05-153 LSS 4B	NOT REQUIRED	N/A	TWA	N/A	33’	PRIMARY	Note 12
LSS 361G	N/A	PORTABLE	MON ROOM 09-123 01-ID-28-001-5-D4	MUN CORR RM 05-153 LSS 9A	NOT REQUIRED	N/A	TWA	N/A	20'	PRIMARY	Note 12
LSS 361V	N/A	PORTABLE	MON ROOM 09-123 01-ID-28-001-5-D4	MUN CORR RM 05-153 LSS 9A	NOT REQUIRED	N/A	TWA	N/A	20'	PRIMARY	Note 12
LSS 363G	N/A	PORTABLE	OBS COR 09-121 01-ID-28-001-5-C4	TMA RM 12-120 LSS 2A	NOT REQUIRED	N/A	TWA	N/A	60'	PRIMARY	Note 12
LSS 363V	N/A	PORTABLE	OBS COR 09-121 01-ID-28-001-5-C4	TMA RM 12-120 LSS 2A	NOT REQUIRED	N/A	TWA	N/A	60'	PRIMARY	Note 12
LSS 366 G	N/A	PORTABLE	OBS COR 09-173 01-ID-28-001-6-C3	AIRLK "B" RM 06-170 LSS 2B	NOT REQUIRED	N/A	TWA	N/A	25'	PRIMARY	Note 12
LSS 366 V	N/A	PORTABLE	OBS COR 09-173 01-ID-28-001-6-C3	AIRLK "B" RM 06-170 LSS 2B	NOT REQUIRED	N/A	TWA	N/A	25'	PRIMARY	Note 12
LSS 368G	N/A	PORTABLE	MON ROOM 09-123 01-ID-28-001-5-D4	MUN CORR RM 05-153 LSS 9B	NOT REQUIRED	N/A	TWA	N/A	26'	PRIMARY	Note 12
LSS 368V	N/A	PORTABLE	MON ROOM 09-123 01-ID-28-001-5-D4	MUN CORR RM 05-153 LSS 9B	NOT REQUIRED	N/A	TWA	N/A	26'	PRIMARY	Note 12

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LSS 369 G	N/A	PORTABLE	OBS COR 09-173 01-ID-28-001-6-C3	AIRLK "B" RM 06-170 LSS 9C	NOT REQUIRED	N/A	TWA	N/A	19'	PRIMARY	Note 12
LSS 369 V	N/A	PORTABLE	OBS COR 09-173 01-ID-28-001-6-C3	AIRLK "B" RM 06-170 LSS 9C	NOT REQUIRED	N/A	TWA	N/A	19'	PRIMARY	Note 12
LSS 371G	N/A	PORTABLE	OBS COR 09-142 01-ID-28-001-2-C3	SDS RM 21-140 LSS 40A	NOT REQUIRED	N/A	TWA	N/A	32'	PRIMARY	Note 12
LSS 371V	N/A	PORTABLE	OBS COR 09-142 01-ID-28-001-2-C3	SDS RM 21-140 LSS 40A	NOT REQUIRED	N/A	TWA	N/A	32'	PRIMARY	Note 12
LSS 372G	N/A	PORTABLE	ELEC ROOM 28-127 01-ID-28-001-3-D4	DFS ROOM 16-136 LSS 48A	NOT REQUIRED	N/A	TWA	N/A	51’	PRIMARY	Note 12
LSS 372V	N/A	PORTABLE	ELEC ROOM 28-127 01-ID-28-001-3-D4	DFS ROOM 16-136 LSS 48A	NOT REQUIRED	N/A	TWA	N/A	51’	PRIMARY	Note 12
MON 376V	344	412	MON ROOM 09-123 01-ID-28-001-5-D4	XRF AIRLOCK RM 09-123A	UPS	N/A	TWA/ECL	40	35’	N/A	Note 14
MON 377V	360	375	MON ROOM 09-123 01-ID-28-001-5-D4	MON ROOM RM 09-123	UPS	C	TWA	0.5	18’	ACAMS CONFIRM	
MON 377G	375	388	Stair Well 2 35-206 01-ID-28-001-8-C4	MON ROOM RM 09-123	UPS	C	TWA	0.2	18’	ACAMS CONFIRM	
MON 378V	343	368	MON ROOM 09-123 01-ID-28-001-5-C4	XRF ROOM 09-123A 01-ID-28-001-5-D3	UPS	C	TWA	0.5	30’	ACAMS CONFIRM	Note 21
MON 378G	377	441	OBS COR 09-121 01-ID-28-001-5-C4	XRF ROOM 09-123A 01-ID-28-001-5-D3	UPS	C	TWA	0.2	30’	ACAMS CONFIRM	
LSS 379 G	N/A	PORTABLE	OBS COR 09-142 01-ID-28-001-2-C3	OBS COR 09-142 LSS19	NOT REQUIRED	N/A	TWA	N/A	2’	PRIMARY	NOTE 12
LSS 379 V	N/A	PORTABLE	OBS COR 09-142 01-ID-28-001-2-C3	OBS COR 09-142 LSS19	NOT REQUIRED	N/A	TWA	N/A	2’	PRIMARY	NOTE 12
DUC 402V	172	N/A	OBS COR 09-207 01-ID-28-001-8-C3	MPB DUCT RM 10-205	UPS	A	TWA/ECL/ IDLH	40/40/400	30’	N/A	

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
DUC 402G	337	N/A	OBS COR 09-207 01-ID-28-001-8-C3	MPB DUCT RM 10-205	UPS	A	TWA/ECL/ IDLH	40/40/400	30’	N/A	
OBS 403V	116	155	OBS COR 09-207 01-ID-28-001-8-C2	OBS CORR RM 09-207	UPS	C	TWA	0.5	34'	ACAMS CONFIRM	
OBS 403VS	116	N/A	OBS COR 09-207 01-ID-28-001-8-C2	RM 09-207 NOTE 2 OBS COR	UPS	N/A	TWA	0.5	100'	N/A	SAME ACAMS AS OBS 403V
OBS 404V	114	140	OBS COR 09-207 01-ID-28-001-8-C2	OBS CORR RM 09-207	UPS	C	TWA	0.5	75'	ACAMS CONFIRM	
OBS 404V S	114	N/A	OBS COR 09-207 01-ID-28-001-8-C2	RM 09-207 NOTE 2	UPS	N/A	TWA	0.5	100'	N/A	SAME ACAMS AS OBS 404V
OBS 404G	387	380	OBS COR 09-207 01-ID-28-001-8-C2	OBS CORR RM 09-207	UPS	N/A	TWA	0.2	100'	ACAMS CONFIRM	
OBS 407V	113	119	OBS COR 09-203 01-ID-28-001-8-A3	OBS CORR RM 09-203	UPS	C	TWA	0.5	45'	ACAMS CONFIRM	
OBS 407G	388	381	OBS COR 09-203 01-ID-28-001-8-A3	OBS CORR RM 09-203	UPS	C	TWA	0.2	45'	ACAMS CONFIRM	
OBS 408V	115	145	OBS COR 09-219 01-ID-28-001-8-A4	OBS CORR RM 09-219	UPS	C	TWA	0.5	12'	ACAMS CONFIRM	
OBS 408V S	115	N/A	OBS COR 09-219 01-ID-28-001-8-A2	RM 09-219 NOTE 2	UPS	N/A	TWA	0.5	100’	N/A	SAME ACAMS AS OBS 408V
OBS 408G	389	382	OBS COR 09-219 01-ID-28-001-8-A4	OBS CORR RM 09-219	UPS	C	TWA	0.2	100’	ACAMS CONFIRM	
LSS 413 G	N/A	PORTABLE	OBS COR 09-207 01-ID-28-001-8-B2	MPB RM 10-205 LSS 32A	NOT REQUIRED	N/A	TWA	N/A	40'	PRIMARY	Note 12
LSS 413 V	N/A	PORTABLE	OBS COR 09-207 01-ID-28-001-8-B2	MPB RM 10-205 LSS 32A	NOT REQUIRED	N/A	TWA	N/A	40'	PRIMARY	Note 12
LSS 414 G	N/A	PORTABLE	OBS COR 09-203 01-ID-28-001-8-A3	MPB RM 10-205 LSS 32C	NOT REQUIRED	N/A	TWA	N/A	29'	PRIMARY	Note 12

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
LSS 414 V	N/A	PORTABLE	OBS COR 09-203 01-ID-28-001-8-A3	MPB RM 10-205 LSS 32C	NOT REQUIRED	N/A	TWA	N/A	29'	PRIMARY	Note 12
LSS 423 G	N/A	PORTABLE	OBS COR 09-216 01-ID-28-001-8-D3	AIRLK "B" RM 06-218 LSS 25C	NOT REQUIRED	N/A	TWA	N/A	32'	PRIMARY	Note 12
LSS 423 V	N/A	PORTABLE	OBS COR 09-216 01-ID-28-001-8-D3	AIRLK "B" RM 06-218 LSS 25C	NOT REQUIRED	N/A	TWA	N/A	32'	PRIMARY	Note 12
LSS 424 G	N/A	PORTABLE	OBS COR 09-216 01-ID-28-001-8-D3	MPB PLTFR RM 10-205 LSS 35A	NOT REQUIRED	N/A	TWA	N/A	15'	PRIMARY	Note 12
LSS 424 V	N/A	PORTABLE	OBS COR 09-216 01-ID-28-001-8-D3	MPB PLTFR RM 10-205 LSS 35A	NOT REQUIRED	N/A	TWA	N/A	15'	PRIMARY	Note 12
LSS 425 G	N/A	PORTABLE	OBS COR 09-216 01-ID-28-001-8-D3	AIRLK AB RM 06-218 LSS 35B	NOT REQUIRED	N/A	TWA	N/A	32'	PRIMARY	Note 12
LSS 425 V	N/A	PORTABLE	OBS COR 09-216 01-ID-28-001-8-D3	AIRLK AB RM 06-218 LSS 35B	NOT REQUIRED	N/A	TWA	N/A	32'	PRIMARY	Note 12
DPE 427V	141	148	OBS COR RM 09-207 01-ID-28-001-8-C3	DPE SUIT RM 09-216	UPS	C	TWA	0.5	100'	ACAMS CONFIRM	
DPE 427G	378	411	OBS COR RM 09-207 01-ID-28-001-8-C3	DPE SUIT RM 09-216	UPS	C	TWA	0.2	100'	ACAMS CONFIRM	
AL 428V	143	N/A	STAIR WELL 2 35-206 01-ID-28-001-8-D4	AIRLK "A" RM 06-217	UPS	A	ECL/ TWA	40	75'	N/A	
AL 428G	363	N/A	STAIR WELL 2 35-206 01-ID-28-001-8-D4	AIRLK "A" RM 06-217	UPS	A	ECL/ TWA	40	75'	N/A	
AL 429V	140	N/A	STAIR WELL 2 35-206 01-ID-28-001-8-D4	AIRLK "B" RM 06-218	UPS	B	TWA/ ECL	0.5	80’	N/A	
AL 429G	364	N/A	STAIR WELL 2 35-206 01-ID-28-001-8-D4	AIRLK "B" RM 06-218	UPS	B	TWA/ ECL	0.2	80’	N/A	
AL 430V	325	N/A	OBS COR 09-207 01-ID-28-001-8-C3	AIRLK “A” BAGGED ITEMS RM 06-217	UPS	N/A	TWA	N/A	100’	N/A	NOTE 13

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
AL 430G	342	N/A	OBS COR 09-207 01-ID-28-001-8-C3	AIRLK "A" BAGGED ITEMS RM 06-217	UPS	N/A	TWA	N/A	100'	N/A	
AL 450V	315	N/A	OBS COR 09-121 01-ID-28-001-5-C4	SAMPLE WAND TMA AIR LOCK 12-117	UPS	N/A	TWA	0.5	60'	N/A	BAGGED ITEMS & DECONNED ONC
AL 450G	384	N/A	OBS COR 09-121 01-ID-28-001-5-C4	SAMPLE WAND TMA AIR LOCK 12-117	UPS	N/A	TWA	0.2	60'	N/A	BAGGED ITEMS
OBS 451V	106	106	OBS COR 09-145 01-ID-28-001-2-A2	OBS CORR RM 09-145	UPS	C	TWA	0.5	45'	ACAMS CONFIRM	
BSA 452V	118	N/A	OBS COR 09-148 01-ID-28-001-2-A3	BSA RM 17-146	UPS	A	TWA/ECL/ IDLH	40/40/400	49'	N/A	
TMA 453V	230	N/A	OBS COR 09-121 01-ID-28-001-5-C4	TMA RM 12-120	UPS	A	ECL/ TWA	40	75'	N/A	
TMA 453G	369	N/A	OBS COR 09-121 01-ID-28-001-5-C4	TMA RM 12-120	UPS	A	ECL/ TWA	40	75'	N/A	
OBS 454V	166	161	OBS COR 09-121 01-ID-28-001-5-D4	OBS CORR RM 09-121	UPS	C	TWA	0.5	22'	ACAMS CONFIRM	
OBS 454VS	166	N/A	OBS COR 09-121 01-ID-28-001-5-D4	OBS CORR RM 09-121 NOTE 2	UPS	N/A	TWA	0.5	100'	N/A	SAME ACAMS AS OBS 454
OBS 454G	373	387	OBS COR 09-121 01-ID-28-001-5-D4	OBS CORR RM 09-121	UPS	C	TWA	0.2	22'	ACAMS CONFIRM	
MUN 455V	131	N/A	OBS COR 09-115 01-ID-28-001-1-D4	MUN CORR RM 05-153	UPS	A/B	TWA/ECL/ IDLH	40/40/400	80'	N/A	
MUN 455G	379	N/A	OBS COR 09-115 01-ID-28-001-1-D4	MUN CORR RM 05-153	UPS	A/B	TWA/ECL/ IDLH	40/40/400	80'	N/A	
DEC 456V	159	NA	OBS COR 09-115 01-ID-28-001-5-B4	DECON HOOD RM 12-177	UPS	B	TWA/ECL	0.5	65'	N/A	ALARM LIGHT IN ROOM AUTOMATIC LOCK ON DOOR
DEC 456G	361	N/A	OBS COR 09-115 01-ID-28-001-5-B4	DECON HOOD BAGGED ITEMS RM 12-177	UPS	N/A	TWA	N/A	75'	N/A	

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
DEC 456VS	159	N/A	OBS COR 09-115 01-ID-28-001-5-B4	RM 12-118 NOTE 2	UPS	N/A	TWA	0.5	100'	N/A	BAGGED ITEMS, ROOM 12-118 AND ONC SAME ACAMS AS DEC 456V
MON 457V	112	118	OBS COR 09-148 01-ID-28-001-2-A3	OBS CORR RM 09-148	UPS	C	TWA	0.5	20'	ACAMS CONFIRM	
AL 458V	154	N/A	MON ROOM 09-148 01-ID-28-001-2-A3	AIRLK "B" RM 14-165	UPS	B	TWA/ ECL	0.5	35'	N/A	
AL 459V	156	116	OBS COR 09-121 01-ID-28-001-5-C4	AIRLK AC FOR ONC DECON RM 12-117	UPS	C	TWA	0.5	50'	ACAMS CONFIRM	
AL 459G	365	409	OBS COR 09-121 01-ID-28-001-5-C4	AIRLK AC FOR ONC DECON RM 12-117	UPS	C	TWA	0.2	50'	ACAMS CONFIRM	
MPF 460V	107	105	MON ROOM 09-148 01-ID-28-001-1-D3	MPF RM 14-149	UPS	B	ECL/ TWA	0.5	35'	ACAMS CONFIRM	
VES 462V	N/A	165	MON ROOM 09-151 01-ID-28-001-1-C2	VEST RM 09-150	SPS	C	TWA	N/A	30'	PRIMARY	
MON 463V	101	167	MON ROOM 09-151 01-ID-28-001-1-C3	MON RM RM 09-151	UPS	C	TWA	0.5	40'	ACAMS CONFIRM	
MPF 465V	148	138	MON ROOM 09-151 01-ID-28-001-1-C3	DROP AREA RM 14-152	UPS	B	TWA/ ECL	0.5	48'	ACAMS CONFIRM	ENTRY TO MPF ROOM
MPF 465G	392	443	MON ROOM 09-151 01-ID-28-001-1-C3	DROP AREA RM 14-152	UPS	B	TWA/ ECL	0.2	48'	ACAMS CONFIRM	ENTRY TO MPF ROOM
LSS 466G	N/A	PORTABLE	MON ROOM 09-148 01-ID-28-001-2-A3	BSA RM 17-146 LSS 7A	NOT REQUIRED	N/A	TWA	N/A	28'	PRIMARY	Note 12
LSS 466V	N/A	PORTABLE	MON ROOM 09-148 01-ID-28-001-2-A3	BSA RM 17-146 LSS 7A	NOT REQUIRED	N/A	TWA	N/A	28'	PRIMARY	Note 12
AL 468V	288	360	MON ROOM 09-148 01-ID-28-001-2-A3	MPF DISCHG A/L DUCT RM 14-149	UPS	B	TWA	0.2	35'	ACAMS CONFIRM	Note 10
AL 468G	366	407	MON ROOM 09-148 01-ID-28-001-2-A3	MPF DISCHG A/L DUCT RM 14-149	UPS	B	TWA	0.2	35'	ACAMS CONFIRM	Note 10

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
TMA 469V	324	N/A	MON ROOM 09-123 01-ID-28-001-5-D4	TMA BAGGED ITEMS RM 12-120	UPS	A	TWA	N/A	90’	N/A	
TMA 469G	334	N/A	MON ROOM 09-121 01-ID-28-001-5-C4	TMA BAGGED ITEMS RM 12-120	UPS	A	TWA	N/A	90’	N/A	
LSS 470G/V	N/A	PORTABLE	MON ROOM 09-123 01-ID-28-001-5-D3	STAIRWAY RM 35-166 LSS 1A	NOT REQUIRED	N/A	TWA	N/A	12'	PRIMARY	Note 12
AL 471V	165	N/A	OBS COR 09-173 01-ID-28-001-6-C4	AIRLK "A" RM 06-169	UPS	A	ECL/ TWA	40	46'	N/A	
AL 471G	367	N/A	OBS COR 09-173 01-ID-28-001-6-C4	AIRLK "A" RM 06-169	UPS	A	ECL/ TWA	40	46'	N/A	
AL 472V	164	N/A	OBS COR 09-173 01-ID-28-001-6-C4	AIRLK "B" RM 06-170	UPS	B	TWA/ECL	0.5	40'	N/A	
AL 472G	368	N/A	OBS COR 09-173 01-ID-28-001-6-C4	AIRLK "B" RM 06-170	UPS	B	TWA/ECL	0.2	40'	N/A	
OBS 473V	162	162	OBS COR 09-173 01-ID-28-001-6-C4	AREA RM 09-173	UPS	C	TWA	0.5	23'	ACAMS CONFIRM	
OBS 473G	376	410	OBS COR 09-173 01-ID-28-001-6-C4	AREA RM 09-173	UPS	C	TWA	0.2	23'	ACAMS CONFIRM	
OBS 474V	168	168	OBS COR 09-173 01-ID-28-001-6-C4	AREA RM 06-171	UPS	C	TWA	0.5	40'	ACAMS CONFIRM	
AL 475V	386	N/A	OBS COR 09-173 01-ID-28-001-6-C4	AIRLK “A” BAGGED ITEMS RM 06-169	UPS	A	TWA	N/A	46’	N/A	NOTE 13
MPF 476G	N/A	566	OBS COR 09-148 01-ID-28-001-2-A3	MPF COOL DOWN AREA	UPS	D	TWA	N/A	45’	HIST	
MPF 476V	N/A	565	OBS COR 09-148 01-ID-28-001-2-A3	MPF COOL DOWN AREA	UPS	D	TWA	N/A	45’	HIST	
OBS 551V	110	117	OBS COR 09-115 01-ID-28-001-5-B3	OBS CORR RM 09-115	UPS	C	TWA	0.5	20'	ACAMS CONFIRM	

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OBS 551G	374	386	OBS COR 09-115 01-ID-28-001-5-B3	OBS CORR RM 09-115	UPS	C	TWA	0.2	20'	ACAMS CONFIRM	
OBS 552V	137	102	OBS COR 09-115 01-ID-28-001-1-D4	OBS CORR RM 09-115	UPS	C	TWA	0.5	55'	ACAMS CONFIRM	
CON 553G	N/A	439	OBS COR 09-115 01-ID-28-001-5-A3	CONTROL RM RM 08-110	SPS	E	TWA	N/A	50'	HIST	EATING & DRINKING ALLOWED
CON 553V	N/A	133	OBS COR 09-115 01-ID-28-001-5-A3	CONTROL RM RM 08-110	SPS	E	TWA	N/A	50'	HIST	EATING & DRINKING ALLOWED
LSS 554G	N/A	PORTABLE	AIRLOCK 06-162 01-ID-28-001-1-B4	AIRLK A/B RM 13-154 LSS 6B	NOT REQUIRED	N/A	TWA	N/A	33'	PRIMARY	Note 12
LSS 554V	N/A	PORTABLE	AIRLOCK 06-162 01-ID-28-001-1-B4	AIRLK A/B RM 13-154 LSS 6B	NOT REQUIRED	N/A	TWA	N/A	33'	PRIMARY	Note 12
LSS 555G	N/A	PORTABLE	AIRLOCK 06-162 01-ID-28-001-1-B4	AIRLK A/B RM 06-163 LSS 6D	NOT REQUIRED	N/A	TWA	N/A	10'	PRIMARY	Note 12
LSS 555V	N/A	PORTABLE	AIRLOCK 06-162 01-ID-28-001-1-B4	AIRLK A/B RM 06-163 LSS 6D	NOT REQUIRED	N/A	TWA	N/A	10'	PRIMARY	Note 12
LSS 558G	N/A	PORTABLE	AIRLOCK "C" 06-162 01-ID-28-001-1-B4	AIRLK "A/B" RM 13-154 LSS 6E	NOT REQUIRED	N/A	TWA	N/A	30'	PRIMARY	Note 12
LSS 558V	N/A	PORTABLE	AIRLOCK "C" 06-162 01-ID-28-001-1-B4	AIRLK "A/B" RM 13-154 LSS 6E	NOT REQUIRED	N/A	TWA	N/A	30'	PRIMARY	Note 12
FIL 559V	N/A	220	OBS COR 09-115 01-ID-28-001-5-B4	CON RM FILTER MIDBED RM 08-110	SPS	N/A	TWA	N/A	125'	PRIMARY	
MON 560V	138	158	MON ROOM 09-160 01-ID-28-001-1-A3	MON RM RM 09-160	UPS	C	TWA	0.5	37'	ACAMS CONFIRM	
LSS 561G	N/A	PORTABLE	OBS COR 09-115 01-ID-28-001-1-D4	MUN CORR RM 05-153 LSS 6A	NOT REQUIRED	N/A	TWA	N/A	21'	PRIMARY	Note 12
LSS 561V	N/A	PORTABLE	OBS COR 09-115 01-ID-28-001-1-D4	MUN CORR RM 05-153 LSS 6A	NOT REQUIRED	N/A	TWA	N/A	21'	PRIMARY	Note 12

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LIC 562V	227	227	MON ROOM 09-151 01-ID-28-001-1-C2	LIC 1 SEC RM 13-156	UPS	C	TWA	0.5	65'	ACAMS CONFIRM	
LIC 562VS	227	N/A	MON ROOM 09-151 01-ID-28-001-1-C2	LIC 1 NOTE 2	UPS	N/A	TWA	0.5	100'	N/A	SAME ACAMS AS LIC 562V
LIC 563V	226	226	MON ROOM 09-160 01-ID-28-001-1-A2	LIC 2 SEC RM 13-157	UPS	C	TWA	0.5	50'	ACAMS CONFIRM	
LIC 563VS	226	N/A	MON ROOM 09-160 01-ID-28-001-1-A2	LIC 2 NOTE 2	UPS	N/A	TWA	0.5	100'	N/A	ACAMS AS LIC 563V
LIC 564V	181	N/A	MON ROOM 09-151 01-ID-28-001-1-C3	LIC 1 PRI RM 13-155	UPS	A/B	ECL/ TWA	40	55'	N/A	
LIC 565V	145	N/A	MON ROOM 09-160 01-ID-28-001-1-A3	LIC 2 PRI RM 13-158	UPS	A/B	ECL/ TWA	40	56'	N/A	
AL 566V	124	N/A	OBS COR 09-115 01-ID-28-001-1-D4	AIRLK "A" RM 06-164	UPS	A	ECL/ TWA	40	60'	N/A	
AL 566G	380	N/A	OBS COR 09-115 01-ID-28-001-1-D4	AIRLK "A" RM 06-164	UPS	A	ECL/ TWA	40	60'	N/A	
AL 567V	123	N/A	OBS COR 09-115 01-ID-28-001-1-D4	AIRLK "B" RM 06-163	UPS	B	ECL/TWA	0.5	70'	N/A	
AL 567G	381	N/A	OBS COR 09-115 01-ID-28-001-1-D4	AIRLK "B" RM 06-163	UPS	B	ECL/TWA	0.2	70'	N/A	
DEC 568V	153	N/A	OBS COR 09-115 O1-ID 28-001-5-A2	DECON RM RM 12-118	UPS	A	TWA/ ECL	40	50'	N/A	
DEC 568G	390	N/A	OBS COR 09-115 O1-ID 28-001-5-A2	DECON RM RM 12-118	UPS	A	TWA/ ECL	40	50'	N/A	
AL 569V	313	N/A	MON ROOM 09-160 01-ID-28-001-1-A3	AIRLK A/B RM 13-154	UPS	A/B	TWA/ ECL	40	70’	N/A	
AL 570V	314	361	MON ROOM 09-160 01-ID-28-001-1-A3	AIRLK “C” RM 06-162	UPS	C	TWA	0.5	60’	ACAMS CONFIRM	

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AL 570G	385	456	MON ROOM 09-160 01-ID-28-001-1-A3	AIRLK "C" RM 06-162	UPS	C	TWA	0.2	60'	ACAMS CONFIRM	
FIL 601AV	135	126	FILTER MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH STACK	UPS	N/A	TWA	0.2	75'	ACAMS CONFIRM	
FIL 601BV	358	473	FILTER MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH STACK	UPS	N/A	TWA	0.2	75'	ACAMS CONFIRM	STAND-BY FOR FIL 601 AV
FIL 601CG	335	364	FILTER MON HOUSE 75-231 23-ID-28-004-1-C3	FILT EXH STACK	UPS DAAMS SPS	N/A	TWA	0.2	100'	ACAMS CONFIRM	
FIL 601DG	359	536	FILTER MON HOUSE 75-231 23-ID-28-004-1-C3	FILT EXH STACK	UPS DAAMS SPS	N/A	TWA	0.2	100'	ACAMS CONFIRM	STAND-BY FOR FIL 601CG
FIL 612V	190	253	FIL MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 109 SECOND MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	46'	ACAMS CONFIRM	NOTE 1
FIL 612G	N/A	389	FIL MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 109 SECOND MIDBED	SPS	N/A	TWA	N/A	46'	PRIMARY	
FIL 613V	190	254	FIL MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 109 THIRD MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	55'	ACAMS CONFIRM	NOTE 1
FIL 613G	N/A	390	FIL MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 109 THIRD MIDBED	SPS	N/A	TWA	N/A	55'	PRIMARY	
FIL 614V	N/A	414	FIL MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 109 FOURTH MIDBED	DAAMS SPS	N/A	TWA	N/A	55'	PRIMARY	NOTE 19
FIL 619V	190	305	FILTER EXH 109 75-231 23-ID-28-004-1-C4	FILTER EXH 109 DOOR ENCLOSURE	UPS DAAMS SPS	N/A	TWA	0.5	39'	ACAMS CONFIRM /PRIMARY	NOTES 1 and 21
FIL 622V	189	256	FIL EXH MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 108 SECOND MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	26'	ACAMS CONFIRM	NOTE 1
FIL 622G	N/A	391	FIL EXH MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 108 SECOND MIDBED	SPS	N/A	TWA	N/A	26'	PRIMARY	

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
FIL 623V	189	257	FIL EXH MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 108 THIRD MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	35'	ACAMS CONFIRM	NOTE 1
FIL 623G	N/A	392	FIL EXH MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 108 THIRD MIDBED	SPS	N/A	TWA	N/A	35’	PRIMARY	
FIL 624V	N/A	416	FIL EXH MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 108 FOURTH MIDBED	SPS	N/A	TWA	N/A	35'	PRIMARY	NOTE 19
FIL 629V	189	306	FIL EXH 108 75-23123-ID-28-004-1-C-4	FILT EXH DOOR ENCLOSURE	UPS DAAMS SPS	N/A	TWA	0.5	39'	ACAMS CONFIRM /PRIMARY	NOTES 1 and 21
FIL 632V	188	250	FIL EXH MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 107 SECOND MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	45'	ACAMS CONFIRM	
FIL 632G	N/A	393	FIL EXH MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 107 SECOND MIDBED	SPS	N/A	TWA	N/A	36'	PRIMARY	
FIL 633V	188	251	FIL EXH MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 107 THIRD MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	45'	ACAMS CONFIRM	NOTE 1
FIL 633G	N/A	394	FIL EXH MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 107 THIRD MIDBED	SPS	N/A	TWA	N/A	45’	PRIMARY	
FIL 634V	**N/A**	418	FIL EXH MON HOUSE 75-231 23-ID-28-004-1-C4	FILT EXH 107 FOURTH MIDBED	SPS	N/A	TWA	N/A	45'	PRIMARY	Note 19
FIL 639V	188	307	FILTER EXH 107 75-231 23-ID-28-004-1-C4	FILTER EXH 107 DOOR ENCLOSURE	UPS DAAMS SPS	N/A	TWA	0.5	39'	ACAMS CONFIRM /PRIMARY	NOTES 1 and 21
FIL 642V	161	235	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 106 SECOND MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	60'	ACAMS CONFIRM	NOTE 1
FIL 642G	N/A	395	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 106 SECOND MIDBED	SPS	N/A	TWA	N/A	60’	PRIMARY	
FIL 643V	161	236	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 106 THIRD MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	46'	ACAMS CONFIRM	NOTE 1
FIL 643G	N/A	396	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 106 THIRD MIDBED	SPS	N/A	TWA	N/A	46’	PRIMARY	

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
FIL 644V	**N/A**	420	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 106 FOURTH MIDBED	SPS	N/A	TWA	N/A	46'	PRIMARY	NOTE 19
FIL 649V	161	308	FILTER EXH 106 75-232 23-ID-28-004-1-C3	FILTER EXH 106 DOOR ENCLOSURE	UPS DAAMS SPS	N/A	TWA	0.5	39'	ACAMS CONFIRM /PRIMARY	NOTES 1 and 21
FIL 652V	186	238	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 105 SECOND MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	26'	ACAMS CONFIRM	NOTE 1
FIL 652G	N/A	397	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 105 SECOND MIDBED	SPS	N/A	TWA	N/A	26’	PRIMARY	
FIL 653V	186	239	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 105 THIRD MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	35'	ACAMS CONFIRM	NOTE 1
FIL 653G	N/A	398	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 105 THIRD MIDBED	SPS	N/A	TWA	N/A	35’	PRIMARY	
FIL 654V	**N/A**	422	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 105 FOURTH MIDBED	SPS	N/A	TWA	N/A	35’	PRIMARY	NOTE 19
FIL 659V	186	309	FILTER EXH 105 75-232 23-ID-28-004-1-C3	FILTER EXH 105 DOOR ENCLOSURE	UPS DAAMS SPS	N/A	TWA	0.5	39'	ACAMS CONFIRM/PRIMARY	NOTES 1 and 21
FIL 662V	187	259	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 104 SECOND MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	36'	ACAMS CONFIRM	NOTE 1
FIL 662G	N/A	399	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 104 SECOND MIDBED	SPS	N/A	TWA	N/A	36’	PRIMARY	
FIL 663 V	187	260	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 104 THIRD MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	45'	ACAMS CONFIRM	NOTE 1
FIL 663G	N/A	400	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 104 THIRD MIDBED	SPS	N/A	TWA	N/A	45’	PRIMARY	
FIL 664V	**N/A**	424	FIL EXH MON HOUSE 75-232 23-ID-28-004-1-C3	FILT EXH 104 FOURTH MIDBED	SPS	N/A	TWA	N/A	45'	PRIMARY	Note 19
FIL 669V	187	310	FILTER EXH 104 75-232 23-ID-28-004-1-C2	FILTER EXH 104 DOOR ENCLOSURE	UPS DAAMS SPS	N/A	TWA	0.5	39'	ACAMS CONFIRM	NOTES 1 and 21

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
FIL 672V	142	241	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 103 SECOND MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	60'	ACAMS CONFIRM	NOTE 1
FIL 672G	N/A	401	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 103 SECOND MIDBED	SPS	N/A	TWA	N/A	60'	PRIMARY	
FIL 673V	142	242	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 103 THIRD MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	55'	ACAMS CONFIRM	NOTE 1
FIL 673G	N/A	402	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 103 THIRD MIDBED	SPS	N/A	TWA	N/A	55’	PRIMARY	
FIL 674V	**N/A**	426	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 103 FOURTH MIDBED	SPS	N/A	TWA	N/A	55'	PRIMARY	NOTE 19
FIL 679V	142	311	FILTER EXH 103 75-233 23-ID-28-004-1-C2	FILTER EXH 103 DOOR ENCLOSURE	UPS DAAMS SPS	N/A	TWA	0.5	39'	ACAMS CONFIRM /PRIMARY	NOTES 1 and 21
FIL 682V	132	244	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 102 SECOND MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	26'	ACAMS CONFIRM	NOTE 1
FIL 682G	N/A	403	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 102 SECOND MIDBED	SPS	N/A	TWA	N/A	26’	PRIMARY	
FIL 683V	132	245	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 102 THIRD MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	35'	ACAMS CONFIRM	NOTE 1
FIL 683G	N/A	404	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 102 THIRD MIDBED	SPS	N/A	TWA	N/A	35’	PRIMARY	
FIL 684V	**N/A**	428	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 102 FOURTH MIDBED	SPS	N/A	TWA	N/A	35'	PRIMARY	NOTE 19
FIL 689V	132	312	FILTER EXH 102 75-233 23-ID-28-004-1-C1	FILTER EXH 102 DOOR ENCLOSURE	UPS DAAMS SPS	N/A	TWA	0.5	39'	ACAMS CONFIRM /PRIMARY	NOTES 1 and 21
FIL 692V	109	247	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 101 SECOND MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	36'	ACAMS CONFIRM	NOTE 1
FIL 692G	N/A	405	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 101 SECOND MIDBED	SPS	N/A	TWA	N/A	36’	PRIMARY	

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
FIL 693V	109	248	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 101 THIRD MIDBED	UPS DAAMS SPS	N/A	TWA	0.5	45'	ACAMS CONFIRM	NOTE 1
FIL 693G	N/A	406	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 101 THIRD MIDBED	SPS	N/A	TWA	N/A	45’	PRIMARY	
FIL 694V	**N/A**	430	FIL EXH MON HOUSE 75-233 23-ID-28-004-1-C1	FILT EXH 101 FOURTH MIDBED	SPS	N/A	TWA	N/A	45'	PRIMARY	NOTE 19
FIL 699V	109	313	FILTER EXH 101 75-233 23-ID-28-004-1-C1	FILTER EXH 101 DOOR ENCLOSURE	UPS DAAMS SPS	N/A	TWA	0.5	39'	ACAMS CONFIRM /PRIMARY	NOTES 1 and 21
PAS 701AG	129	N/A	MON HOUSE 75-461 06-ID-28-003-1-C3	COMMON STACK RM 75-461	UPS	N/A	ASC	0.2	20’	N/A	ALTERNATING CYCLES W/701B OR 701C
PAS 701BG	225	N/A	MON HOUSE 75-461 06-ID-28-003-1-C3	COMMON STACK RM 75-461	UPS	N/A	ASC	0.2	20'	N/A	ALTERNATING CYCLES W/701A OR 701C (Different Capillary column than PAS 701AG)
PAS 701CG	223	N/A	MON HOUSE 75-461 06-ID-28-003-1-C3	COMMON STACK RM 75-461	UPS	N/A	ASC	0.2	20'	N/A	Back- up for 701A and 701B
PAS 701DG	N/A	129	MON HOUSE 75-461 06-ID-28-003-1-C3	COMMON STACK RM 75-461	UPS	N/A	ASC	N/A	3'	ACAMS CONFIRM	
PAS 701EG	N/A	314	MON HOUSE 75-461 06-ID-28-003-1-C3	COMMON STACK RM 75-461	UPS	N/A	ASC	N/A	4’	BACKUP ACAMS CONFIRM	NOTE 4
PAS 702AV	183	315	MON HOUSE 75-263 06-ID-28-003-1-C1	DFS DUCT	UPS	N/A	ASC	0.5	75'	ACAMS CONFIRM	
PAS 702BV	354	557	MON HOUSE 75-263 06-ID-28-003-1-C1	DFS DUCT	UPS	N/A	ASC	0.5	75'	ACAMS CONFIRM	STAND-BY FOR PAS 702AV
PAS 702CG	346	371	MON HOUSE 75-263 06-ID-28-003-1-C1	DFS DUCT	UPS	N/A	ASC	0.2	75'	ACAMS CONFIRM	
PAS 702DG	347	560	MON HOUSE 75-263 06-ID-28-003-1-C1	DFS DUCT	UPS	N/A	ASC	0.2	75'	ACAMS CONFIRM	STAND-BY For PAS 702CG

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
PAS 703AV	167	316	MON HOUSE 75-263 06-ID-28-003-1-C1	MPF DUCT	UPS	N/A	ASC	0.5	60'	ACAMS CONFIRM	
PAS 703BV	355	559	MON HOUSE 75-263 06-ID-28-003-1-C1	MPF DUCT	UPS	N/A	ASC	0.5	60'	ACAMS CONFIRM	STAND-BY FOR 703AV
PAS 703CG	348	372	MON HOUSE 75-263 06-ID-28-003-1-C1	MPF DUCT	UPS	N/A	ASC	0.2	60'	ACAMS CONFIRM	
PAS 703DG	349	558	MON HOUSE 75-263 06-ID-28-003-1-C1	MPF DUCT	UPS	N/A	ASC	0.2	60'	ACAMS CONFIRM	STAND-BY FOR PAS 703CG
PAS 704AV	163	229	MON HOUSE 75-263 06-ID-28-003-1-C1	LIC 1 DUCT	UPS	N/A	ASC	0.5	50'	ACAMS CONFIRM	
PAS 704BV	356	373	MON HOUSE 75-263 06-ID-28-003-1-C1	LIC 1 DUCT	UPS	N/A	ASC	0.5	50'	ACAMS CONFIRM	STAND-BY FOR PAS 704AV
PAS 705AV	134	228	MON HOUSE 75-263 06-ID-28-003-1-C1	LIC 2 DUCT	UPS	N/A	ASC	0.5	50’	ACAMS CONFIRM	
PAS 705BV	357	374	MON HOUSE 75-263 06-ID-28-003-1-C1	LIC 2 DUCT	UPS	N/A	ASC	0.5	50’	ACAMS CONFIRM	STAND-BY FOR PAS 705AV
PAS 706AV	331	N/A	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	ASC	0.2	20’	N/A	ALTERNATING CYCLES w/706B or 706C
PAS 706BV	332	N/A	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	ASC	0.2	20’	N/A	ALTERNATING CYCLES w/706A or 706C
PAS 706CV	333	N/A	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	ASC	0.2	20’	N/A	STANDBY FOR 706A and 706B
PAS 706DV	N/A	362	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	ASC	N/A	5’	ACAMS CONFIRM	
PAS 706EV	N/A	363	MON HOUSE 75-461 06-ID-28-003-1-D3	COMMON STACK RM 75-461	UPS	N/A	ASC	N/A	5’	ACAMS CONFIRM	
PMB 901V	N/A	181	PMB MER 20-113 14-ID-28-008-1-C3	PMB FILTER STACK	SPS	N/A	TWA	N/A	50’	PRIMARY	

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
PMB 902V	N/A	184	PMB MER 20-113 14-ID-28-008-1-C3	FILT 102 MIDBED	SPS	N/A	TWA	N/A	16’	PRIMARY	
FIL 903V	N/A	183	PMB MER 20-113 14-ID-28-008-1-C3	FILT 101 MIDBED	SPS	D	TWA	N/A	50’	PRIMARY	AIR INTO MEDICAL AREA EATING & DRINKING ALLOWED
MED 904V	261	377	MEDICAL ROOM 102-136 14-ID-28-008-1-C4	MEDICAL RM 102-136	UPS	C	TWA	0.5	10’	ACAMS CONFIRM	NOTE 9
MED 904G	341	376	MEDICAL ROOM 102-136 14-ID-28-008-1-C4	MEDICAL RM 102-136	UPS	C	TWA	0.2	10’	ACAMS CONFIRM	NOTE 9
PMB 905V	N/A	262	LUNCH/CONFERENCE/ STORAGE 14-ID-28-008-1-B4	LUNCH RM AIR RM 82-104	SPS	D	TWA	N/A	25'	HIST	EATING & DRINKING ALLOWED
PMB 905G	N/A	431	LUNCH/CONFERENCE/ STORAGE 14-ID-28-008-1-B4	LUNCH RM AIR RM 82-104	SPS	D	TWA	N/A	25'	HIST	EATING & DRINKING ALLOWED
PMB 906V	263	263	COTTON GOODS STORAGE AREA 14-ID-28-008-1-B4	COTTON GOODS MONITORING	UPS	D	TWA	0.5	15'	ACAMS CONFIRM	NOTE 3 ITEMS GOING TO LAUNDRY
PMB 906G	370	408	COTTON GOODS STORAGE AREA 14-ID-28-008-1-B4	COTTON GOODS MONITORING	UPS	D	TWA	0.2	15'	ACAMS CONFIRM	
ECF 907G	N/A	435	GUARD HOUSE 13-ID-28-007-1-B3	ECF DAY ROOM RM 83-101	SPS	D	TWA	N/A	8'	HIST	EATING & DRINKING ALLOWED
ECF 907V	N/A	264	GUARD HOUSE 13-ID-28-007-1-B3	ECF DAY ROOM RM 83-101	SPS	D	TWA	N/A	8'	HIST	EATING & DRINKING ALLOWED
TCB 909G	N/A	467	TCB VESTIBULE 29-ID-28-015-1-B3	TCB RM 107-104	SPS	D	TWA	N/A	20’	HIST	
TCB 910V	258	298	TCB MON ROOM 29-ID-28-015-1-B1	TCB LUNCH RM RM-107-105	UPS	D	TWA	0.5	30'	ACAMS CONFIRM	EATING AND DRINKING ALLOWED
TCB 910G	N/A	432	TCB MON ROOM 29-ID-28-015-1-B1	TCB LUNCH RM RM-107-105	SPS	D	TWA	N/A	30’	HIST	EATING & DRINKING ALLOWED
PMB 911V	263	263	TAP GEAR STORAGE AREA 14-ID-28-008-1-B4	RUBBER GOODS MONITORING	UPS	D	TWA	0.5	100'	ACAMS CONFIRM	NOTE 3 ITEMS GOING TO LAUNDRY

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
PMB 911G	370	408	TAP GEAR STORAGE AREA 14-ID-28-008-1-B4	RUBBER GOODS MONITORING	UPS	D	TWA	0.2	100'	ACAMS CONFIRM	
WHS 912V	N/A	370	ENTRY WAY EAST END OF S2 35-ID-28-021-C2	S2 EXHAUST DUCT	SPS	D	TWA	N/A	7’	HIST	
WHS 912G	N/A	320	ENTRY WAY EAST END OF S2 35-ID-28-021-C2	S2 EXHAUST DUCT	SPS	D	TWA	N/A	7’	HIST	
WHS 915V	N/A	322	INSIDE S-6 35-ID-28-021	WHSE S-6 OFFICE AREA	SPS	D	TWA	N/A	NONE	HIST	EATING AND DRINKING ALLOWED
WHS 915G	N/A	433	INSIDE S-6 35-ID-28-021	WHSE S-6 OFFICE AREA	SPS	D	TWA	N/A	NONE	HIST	EATING AND DRINKING ALLOWED
WHS 916V	N/A	304	EATING AREAS 35-ID-28-021-1-C2	WHSE S-4 LUNCH RM AIR	SPS	D	TWA	N/A	45’	HIST	EATING AND DRINKING ALLOWED
WHS 916G	N/A	434	EATING AREAS 35-ID-28-021-1-C2	WHSE S-4 LUNCH RM AIR	SPS	D	TWA	N/A	45’	HIST	EATING AND DRINKING ALLOWED
MSB 950G	N/A	182	INSIDE MSB 12-ID-28-006-1-C3	MSB ACAMS REPAIR AREA	SPS	D	TWA	N/A	2'	HIST	DRINKING ALLOWED
MSB 950V	N/A	365	INSIDE MSB 12-ID-28-006-1-C3	MSB ACAMS REPAIR AREA	SPS	D	TWA	N/A	2'	HIST	DRINKING ALLOWED
CAL 951V	277	277	MONITORING HOUSE 44-ID-28-020-1	FILTER EXHAUST STACK	UPS	N/A	TWA	0.2	65'	ACAMS CONFIRM	NOTES 13 and 15
CAL 951G	340	367	MONITORING HOUSE 44-ID-28-020-1	FILTER EXHAUST STACK	UPS	N/A	TWA	0.2	65'	ACAMS CONFIRM	NOTES 13 and 15
CAL 952G	N/A	436	MONITORING HOUSE 44-ID-28-020-1	FILTER 13 MIDBED	SPS	N/A	TWA	N/A	50'	PRIMARY	
CAL 952V	N/A	278	MONITORING HOUSE 44-ID-28-020-1	FILTER 13 MIDBED	SPS	N/A	TWA	N/A	50'	PRIMARY	
CAL 953G	N/A	437	MONITORING HOUSE 44-ID-28-020-1	FILTER 8 MIDBED	SPS	N/A	TWA	N/A	50'	PRIMARY	
CAL 953V	N/A	280	MONITORING HOUSE 44-ID-28-020-1	FILTER 8 MIDBED	SPS	N/A	TWA	N/A	50'	PRIMARY	
CAL 954G	N/A	438	MONITORING HOUSE 44-ID-28-020-1	FILTER 5 MIDBED	SPS	N/A	TWA	N/A	23'	PRIMARY	
CAL 954V	N/A	279	MONITORING HOUSE 44-ID-28-020-1	FILTER 5 MIDBED	SPS	N/A	TWA	N/A	23'	PRIMARY	

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
CAL 965G	N/A	265	LUNCH ROOM 103 44-ID-28-020-1	LUNCH RM RM 103	SPS	N/A	TWA	N/A	31'	HIST	NOTE 6 EATING AND DRINKING ALLOWED
CAL 974V	267	267	CORR-117 44-ID-28-020-1	DAAMS LAB RM 119	UPS	D	TWA	0.5	35'	ACAMS CONFIRM	NOTE 13
CAL 974 G	N/A	454	CORR-117 44-ID-28-020-1	DAAMS LAB RM 119	SPS	D	TWA	N/A	35’	PRIMARY	
CAL 980 G	N/A	455	CORR-117 44-ID-28-020-1	GC/MS #2 RM 115	SPS	D	TWA	N/A	25’	PRIMARY	
CAL 980V	345	369	CORR-117 44-ID-28-020-1	GC/MS #2 RM 115	UPS	D	TWA	0.5	25'	ACAMS CONFIRM	Note 13
CAL 981G	271	271	CORR-117 44-ID-28-020-1	TOX LAB RM 114	UPS	C	TWA	0.2	40' ACAMS	ACAMS CONFIRM	NOTE 13
CAL 982V	320	272	CORR-117 44-ID-28-20-1	TOX LAB RM 114	UPS	C	TWA	0.5	20’	ACAMS CONFIRM	NOTE 13
CAL 984G	274	274	CORR-117 44-ID-28-020-1	CAL RM 113	UPS	C	TWA	0.2	35' ACAMS	ACAMS CONFIRM	NOTE 13
CAL 985V	319	275	CORR-117 44-ID-28-020-1	CAL ROOM 113	UPS	C	TWA	0.5	15’	ACAMS CONFIRM	NOTE 13
CAL 987GS	309	N/A	CORR 117 44-ID-28-020-1	CORR 117 SPOOL NOTE 2	UPS	N/A	TWA	0.2	50’	N/A	NOTES 5 & 13
CAL 988VS	318	N/A	ROOM 117 44-ID-28-020-1	CORR 117 SPOOL	SPS	N/A	TWA	0.5	50’	N/A	NOTES 5 and 13
CAL 990V	N/A	378	LUNCHROOM 103 44-ID-28-020-1	LUNCH RM 103	SPS	N/A	TWA	N/A	31’	HIST	EATING AND DRINKING ALLOWED

AGENT MONITORING PLAN NOTES

1. See Paragraph 22.8 for filter monitoring protocol.
2. This station consists of a sample line that may temporarily be connected to a nearby ACAMS (as directed by the CON, to monitor any location within the range of the spool).
3. PMB 906 and PMB 911 use the same ACAMS. The ACAMS normally monitors the PMB 906 location but upon request, the ACAMS and DAAMS can be switched to monitor PMB 911.
4. Used as a backup to PAS 701 DAAMS when tubes are being pulled or maintenance is being performed on primary DAAMS.
5. This ACAMS is not in use at all times. It is for special purposes only. When it is not in use it will have a carbon filter at the ACAMS, with the sample line disconnected.
6. DAAMS monitoring is performed in the CAL lunchroom by TOCDF and CAMDS. CAMDS monitor for the agent of their present campaign.
7. CYC 258G/V and CYC 260G/V use the same ACAMS/DAAMS equipment. They usually monitor station CYC 260G/V but on request the sample line can be switched to monitor CYC 258G/V.
8. Used as a backup to PAS 706 DAAMS when tubes are being pulled or maintenance is being performed on the primary DAAMS.
9. The medical area ACAMS and DAAMS can be switched to monitor three different locations. The medical vestibule, the decon vestibule, or the medical treatment area. In the event of a site agent alarm, a Monitoring technician is dispatched to help the medical personnel.
10. The ACAMS and DAAMS (confirmation) at the MPF Discharge Airlock (AL 468) samples filtered air except when monitoring the discharge airlock.
11. The ACAMS and DAAMS at the Equipment Hydraulic Module (EHM) Station #EHM 354, only monitor the EHM when personnel are inside the EHM. An alarm light is installed inside the EHM for personnel safety. If the ACAMS and DAAMS are not online, the alarm light is on, and personnel are denied entry into the EHM until they are put online.
12. All LSS air DAAMS locations need to be sampled for both VX and GB. The reporting level is 0.2 TWA.
13. Some ACAMS are not connected to PDARS and require manual collection of challenge and calibration data. These locations are CYC 258V, CYC 260V, AL 430V, AL 475V, CAL 951G, CAL 951V, CAL 974V, CAL 980V, CAL 981G, CAL 982V, CAL 984V, CAL 985V, CAL 987GS, and CAL 988VS.
14. This ACAMS sample line has a valve allowing it to monitor in three different locations. The XRF sample preparation area, the pass through from the sample preparation area to the XRF room. The DAAMS only monitor the XRF room. Their purpose is ACAMS alarm confirmation.
15. This ACAMS is located outside the CAL in a monitoring building. A remote alarm and malfunction light is in the CAL to alert personnel if the ACAMS alarms or goes into malfunction.
16. Reserved
17. Reserved.
18. DAAMS shall be collected on this station immediately following any ACAMS alarm.
19. The fourth mid-bed VX DAAMS or 3rd midbed GB DAAMS must be pulled and analyzed in

accordance with Section 22.8.4 when FIL 601 ACAMS alarms.

20. GB shall be monitored, when GB secondary waste has been processed.
21. Access to these areas are limited and controlled. Due to this condition, V/G pads will be changed every 28 days or upon entry.

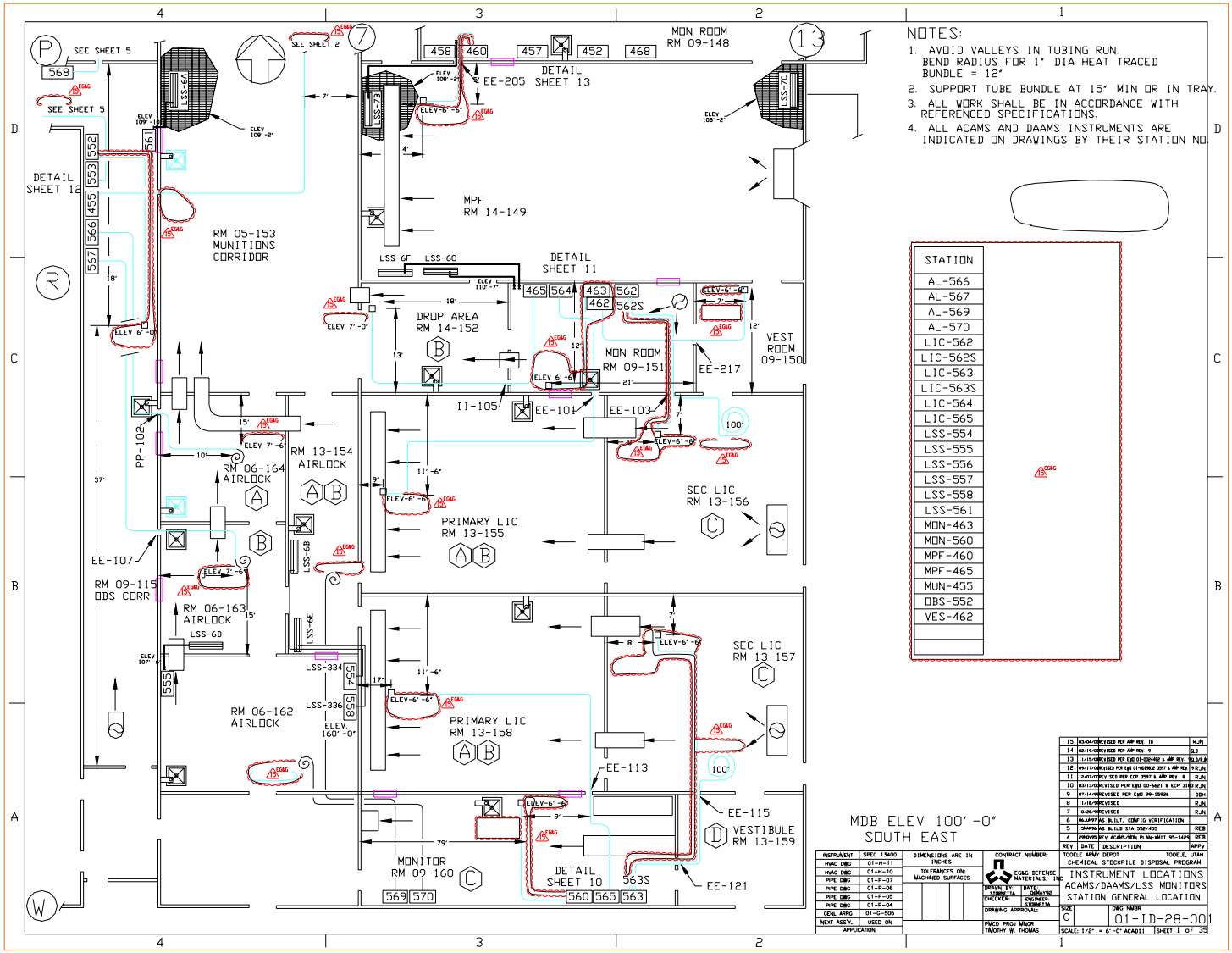
Hazard Level:

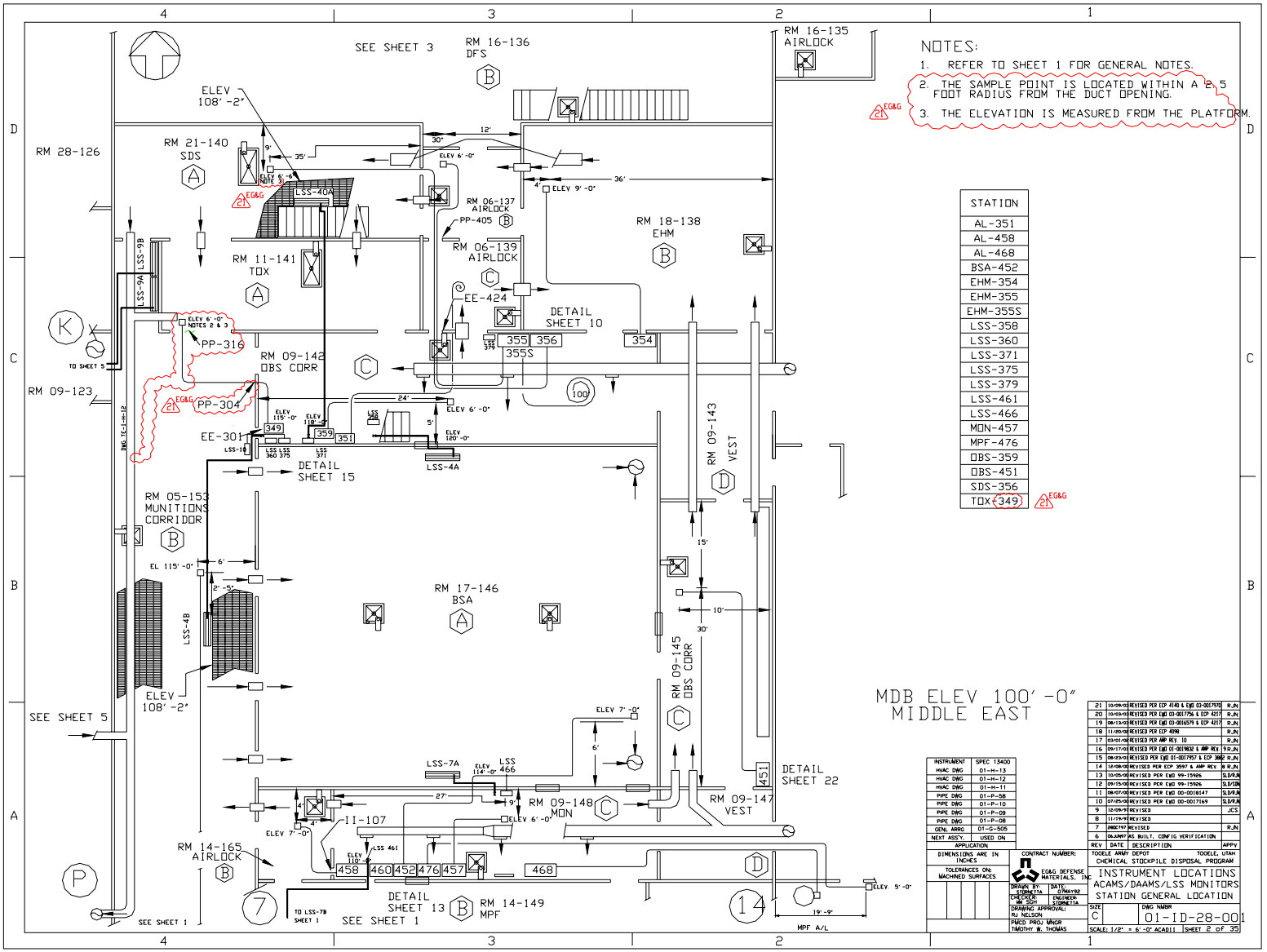
TWA	Time Weighted Average
ASC	Allowable Stack Concentration
ECL	Engineering Control Level
IDLH	Immediately Dangerous to Life and Health
MPL	Maximum Permissible Limit
GLD	Gross Level Detector

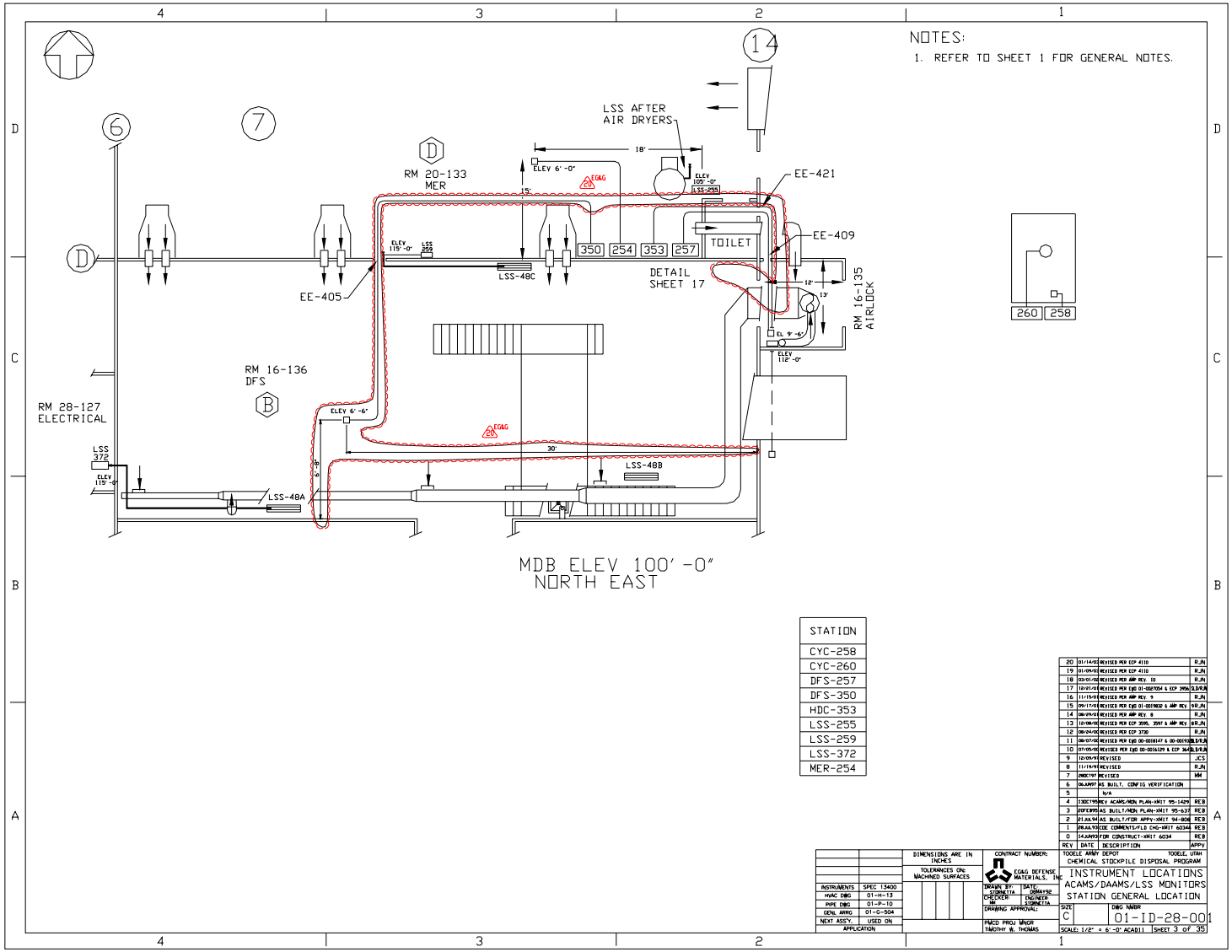
See AR 385-61 for a complete definition of the Hazard Level designations

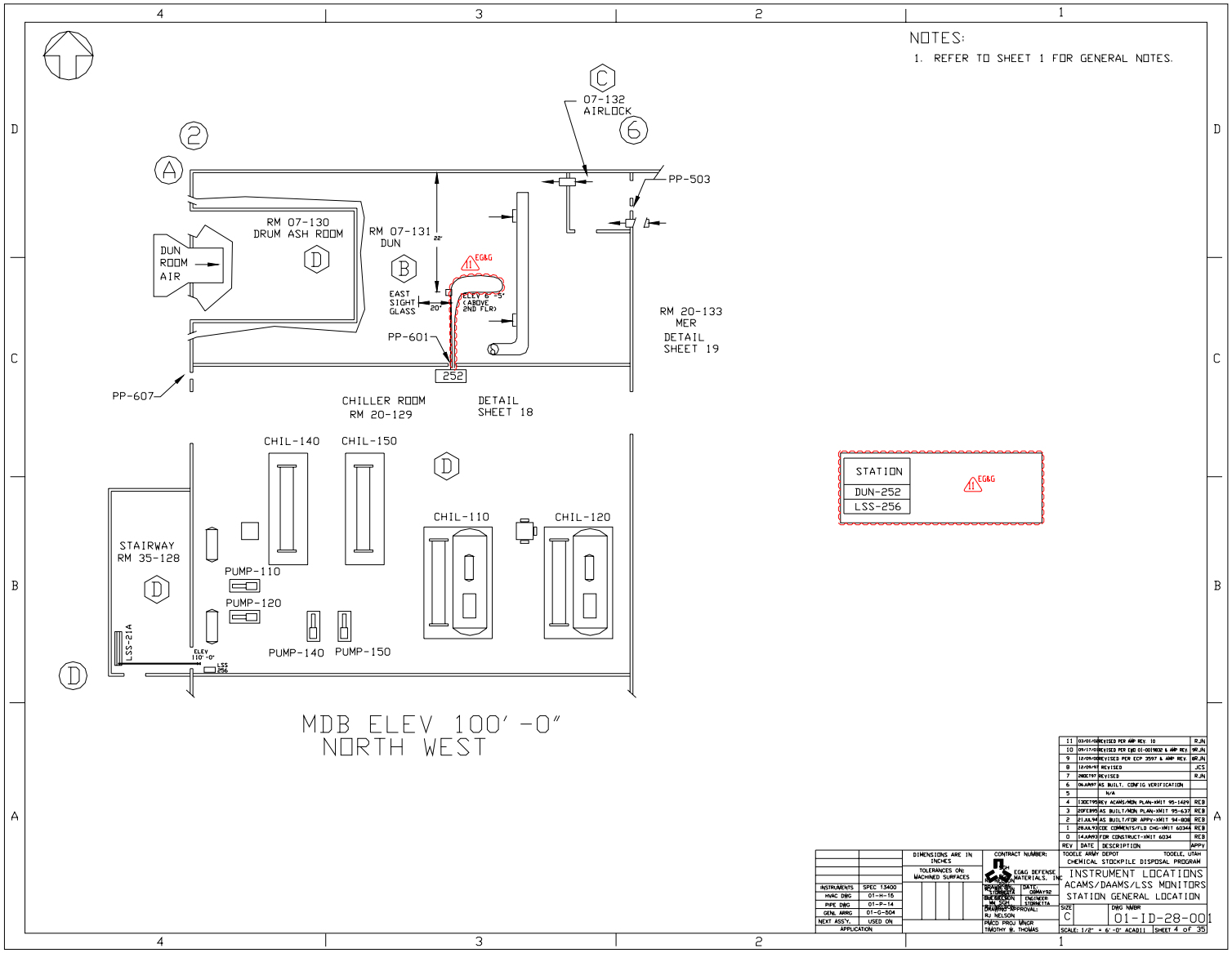
APPENDIX B

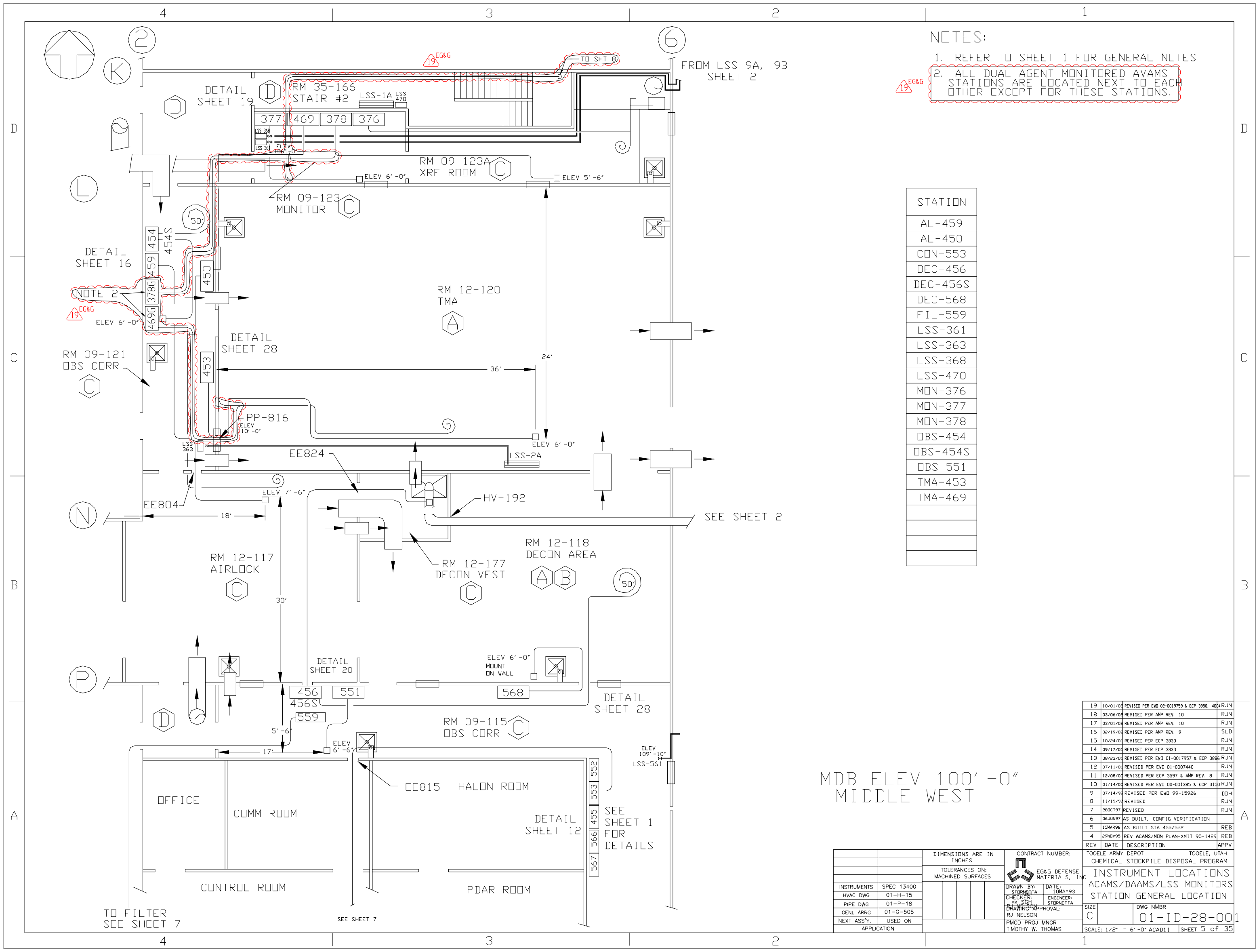
DRAWINGS OF AIR MONITORING LOCATIONS

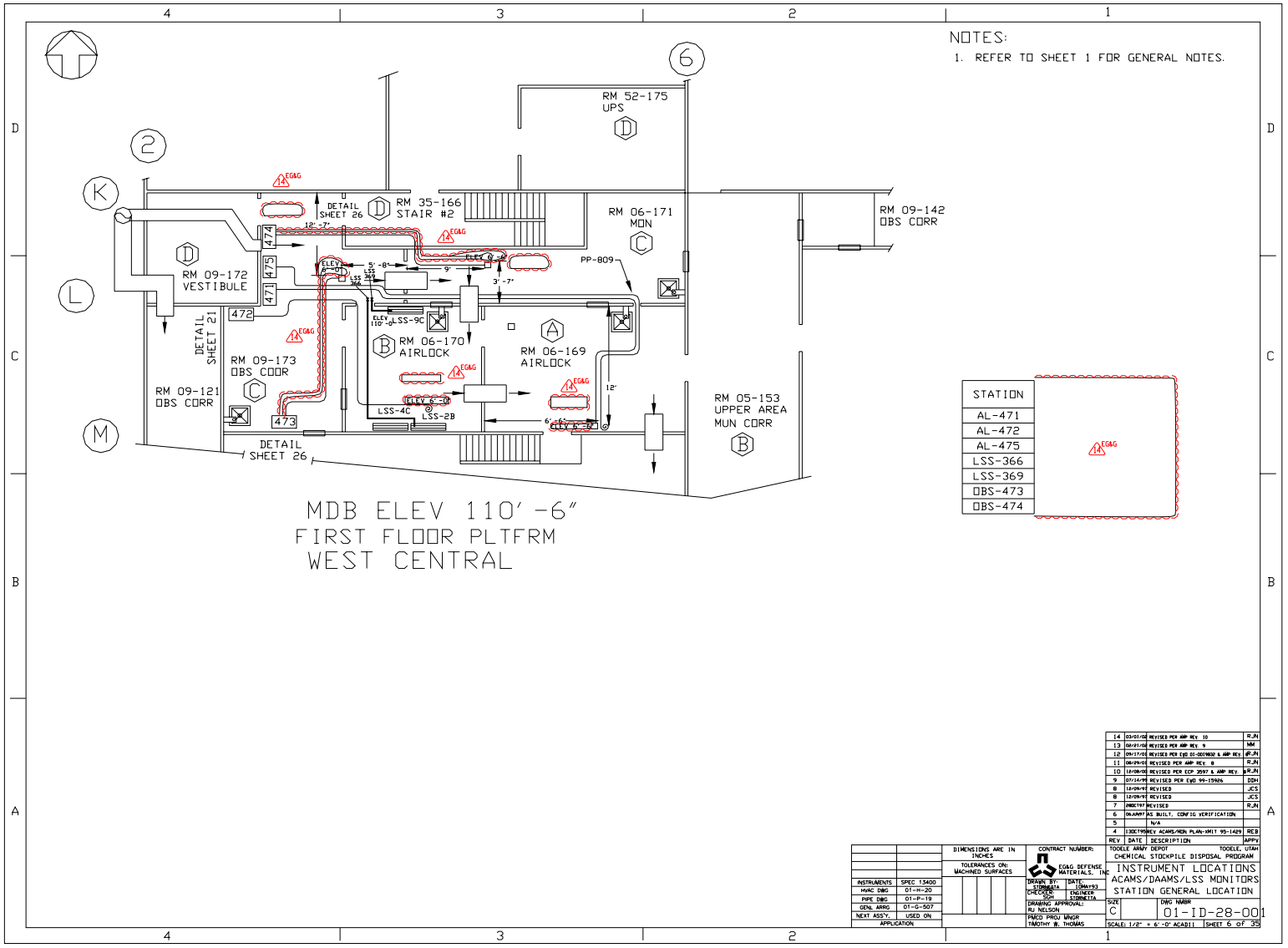

NOTES:
1. AVOID VALLEYS IN TUBING RUN. BEND RADIUS FOR 1" DIA HEAT TRACED BUNDLE = 12"
2. SUPPORT TUBE BUNDLE AT 15" MIN OR IN TRAY.
3. ALL WORK SHALL BE IN ACCORDANCE WITH REFERENCED SPECIFICATIONS.
4. ALL ACAMS AND DAAMS INSTRUMENTS ARE INDICATED ON DRAWINGS BY THEIR STATION NO.
STATION
AL-566
AL-567
AL-569
AL-570
LIC-562
LIC-562S
LIC-563
LIC-563S
LIC-564
LIC-565
LSS-554
LSS-555
LSS-556
LSS-557
LSS-558
LSS-561
MON-463
MON-560
MPF-460
MPF-465
MUN-455
OBS-552
VES-462
MDB ELEV 100'-0"
SOUTH EAST
MON ROOM RM 09-148
MPF RM 14-149
RM 05-153 MUNITIONS CORRIDOR
DROP AREA RM 14-152
MON ROOM RM 09-151
VEST ROOM 09-150
RM 13-154 AIRLOCK
RM 06-164 AIRLOCK
PRIMARY LIC RM 13-155
SEC LIC RM 13-156
RM 09-115 OBS CORR
RM 06-163 AIRLOCK
RM 06-162 AIRLOCK
PRIMARY LIC RM 13-158
SEC LIC RM 13-157
VESTIBULE RM 13-159
MONITOR RM 09-160
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION
TOOELE ARMY DEPOT
TOOELE, UTAH
CHEMICAL STOCKPILE DISPOSAL PROGRAM
01-ID-28-001

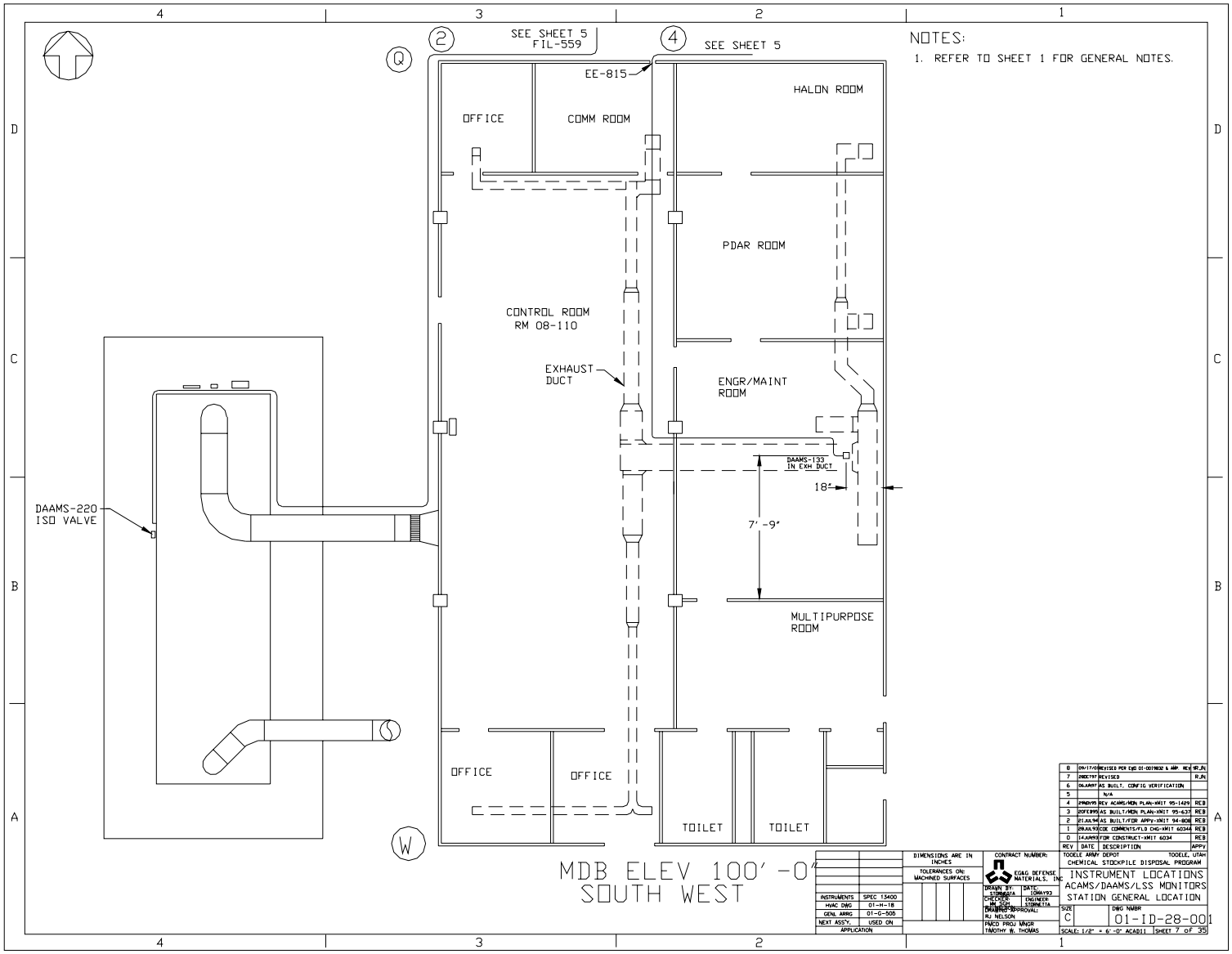

NOTES:
1. REFER TO SHEET 1 FOR GENERAL NOTES.
2. THE SAMPLE POINT IS LOCATED WITHIN A 2.5 FOOT RADIUS FROM THE DUCT OPENING.
3. THE ELEVATION IS MEASURED FROM THE PLATFORM.
STATION
AL-351
AL-458
AL-468
BSA-452
EHM-354
EHM-355
EHM-355S
LSS-358
LSS-360
LSS-371
LSS-375
LSS-379
LSS-461
LSS-466
MON-457
MPF-476
OBS-359
OBS-451
SDS-356
TOX-349
MDB ELEV 100'-0"
MIDDLE EAST
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION
01-ID-28-001
TOOELE ARMY DEPOT
TOOELE, UTAH
CHEMICAL STOCKPILE DISPOSAL PROGRAM
EG&G DEFENSE MATERIALS, INC
SEE SHEET 1
SEE SHEET 3
SEE SHEET 5
RM 16-136 DFS
RM 16-135 AIRLOCK
RM 28-126
RM 21-140 SDS
RM 06-137 AIRLOCK
RM 06-139 AIRLOCK
RM 18-138 EHM
RM 11-141 TOX
RM 09-142 OBS CORR
RM 09-123
RM 05-153 MUNITIONS CORRIDOR
RM 17-146 BSA
RM 09-143 VEST
RM 09-145 OBS CORR
RM 09-147 VEST
RM 09-148 MON
RM 14-165 AIRLOCK
RM 14-149 MPF
DETAIL SHEET 10
DETAIL SHEET 15
DETAIL SHEET 22
DETAIL SHEET 13
PP-405
PP-316
PP-304
EE-424
EE-301
LSS-40A
LSS-9A
LSS-9B
LSS-4A
LSS-4B
LSS-7A
II-107

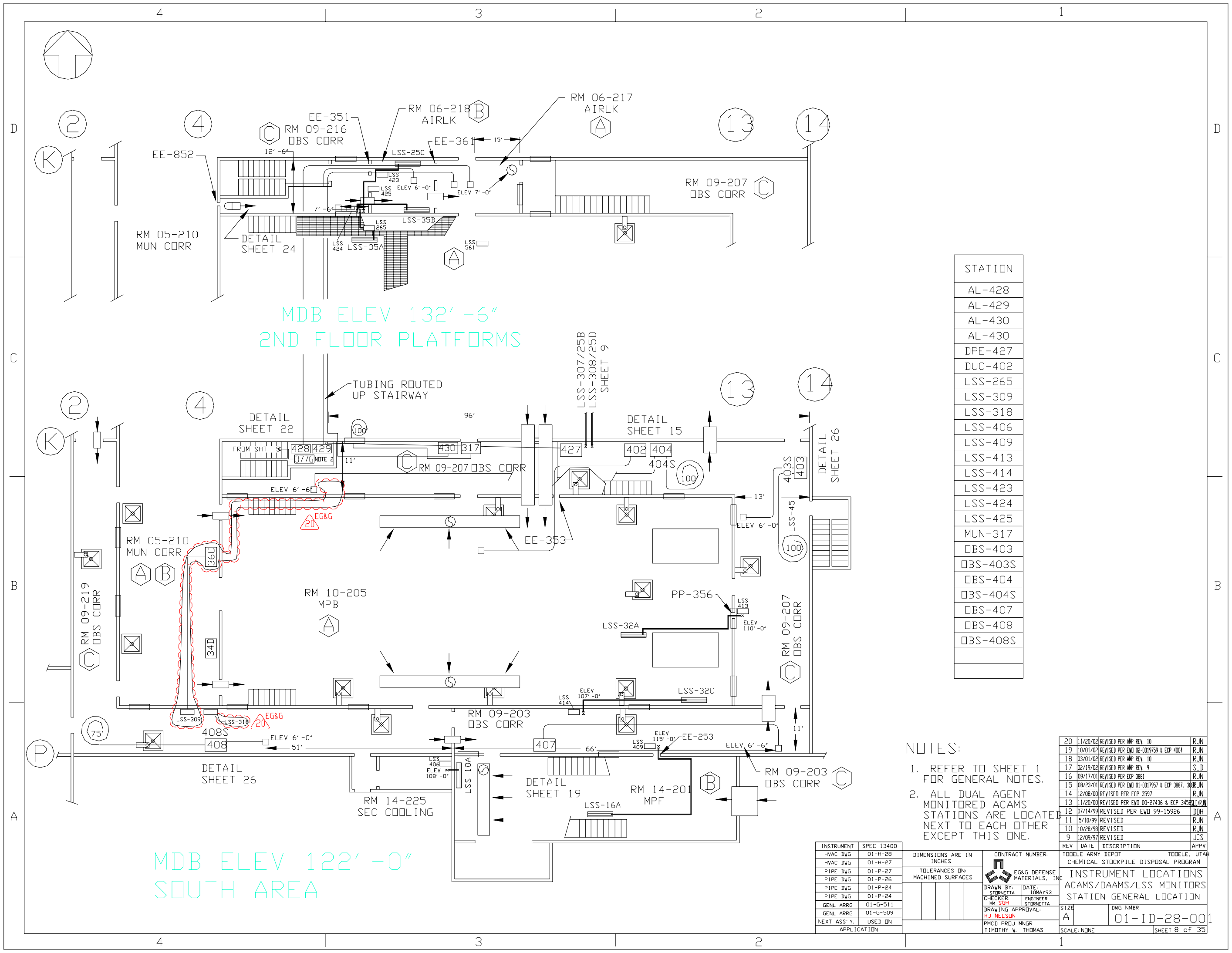

NOTES:
1. REFER TO SHEET 1 FOR GENERAL NOTES.
LSS AFTER AIR DRYERS
RM 20-133 MER
EE-421
EE-409
TOILET
DETAIL SHEET 17
EE-405
LSS-48C
RM 16-135 AIRLOCK
RM 16-136 DFS
RM 28-127 ELECTRICAL
LSS-48A
LSS-48B
MDB ELEV 100' -0"
NORTH EAST
STATION
CYC-258
CYC-260
DFS-257
DFS-350
HDC-353
LSS-255
LSS-259
LSS-372
MER-254
TOOELE ARMY DEPOT
TOOELE, UTAH
CHEMICAL STOCKPILE DISPOSAL PROGRAM
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION
01-ID-28-001


NOTES:
1. REFER TO SHEET 1 FOR GENERAL NOTES.
07-132
AIRLOCK
PP-503
RM 07-130
DRUM ASH ROOM
RM 07-131
DUN
DUN
ROOM
AIR
EAST
SIGHT
GLASS
EG&G
ELEV 6'-5"
(ABOVE
2ND FLR)
PP-601
252
RM 20-133
MER
DETAIL
SHEET 19
PP-607
CHILLER ROOM
RM 20-129
DETAIL
SHEET 18
CHIL-140
CHIL-150
CHIL-110
CHIL-120
STAIRWAY
RM 35-128
PUMP-110
PUMP-120
PUMP-140
PUMP-150
LSS-21A
ELEV
110'-0"
LSS
256
STATION
DUN-252
LSS-256
MDB ELEV 100'-0"
NORTH WEST
CONTRACT NUMBER:
EG&G DEFENSE MATERIALS, INC.
TOOELE ARMY DEPOT
TOOELE, UTAH
CHEMICAL STOCKPILE DISPOSAL PROGRAM
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION
DWG NMBR
01-ID-28-001
SCALE: 1/2" = 1'-0" ACAD11 SHEET 4 OF 35


NOTES:
1. REFER TO SHEET 1 FOR GENERAL NOTES
2. ALL DUAL AGENT MONITORED AVAMS STATIONS ARE LOCATED NEXT TO EACH OTHER EXCEPT FOR THESE STATIONS.
STATION
AL-459
AL-450
CON-553
DEC-456
DEC-456S
DEC-568
FIL-559
LSS-361
LSS-363
LSS-368
LSS-470
MON-376
MON-377
MON-378
OBS-454
OBS-454S
OBS-551
TMA-453
TMA-469
FROM LSS 9A, 9B SHEET 2
TO SHT 8
DETAIL SHEET 19
RM 35-166 STAIR #2
LSS-1A
RM 09-123A XRF ROOM
RM 09-123 MONITOR
DETAIL SHEET 16
NOTE 2
RM 09-121 OBS CORR
RM 12-120 TMA
DETAIL SHEET 28
PP-816
EE824
LSS-2A
HV-192
EE804
SEE SHEET 2
RM 12-117 AIRLOCK
RM 12-177 DECON VEST
RM 12-118 DECON AREA
DETAIL SHEET 20
RM 09-115 OBS CORR
DETAIL SHEET 28
EE815
HALON ROOM
OFFICE
COMM ROOM
DETAIL SHEET 12
SEE SHEET 1 FOR DETAILS
CONTROL ROOM
PDAR ROOM
TO FILTER SEE SHEET 7
MDB ELEV 100'-0"
MIDDLE WEST
TOOELE ARMY DEPOT TOOELE, UTAH
CHEMICAL STOCKPILE DISPOSAL PROGRAM
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION
01-ID-28-001


NOTES:
1. REFER TO SHEET 1 FOR GENERAL NOTES.
RM 52-175
UPS
RM 35-166
STAIR #2
RM 06-171
MUN
RM 09-142
OBS CORR
RM 09-172
VESTIBULE
RM 06-170
AIRLOCK
RM 06-169
AIRLOCK
RM 09-173
OBS COOR
RM 09-121
OBS CORR
RM 05-153
UPPER AREA
MUN CORR
PP-809
LSS-9C
LSS-4C
LSS-2B
DETAIL
SHEET 26
DETAIL
SHEET 21
472
473
474
475
471
STATION
AL-471
AL-472
AL-475
LSS-366
LSS-369
OBS-473
OBS-474
MDB ELEV 110'-6"
FIRST FLOOR PLTFRM
WEST CENTRAL
TOOELE ARMY DEPOT
TOOELE, UTAH
CHEMICAL STOCKPILE DISPOSAL PROGRAM
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION
DWG NMBR
01-ID-28-001
SHEET 6 OF 35

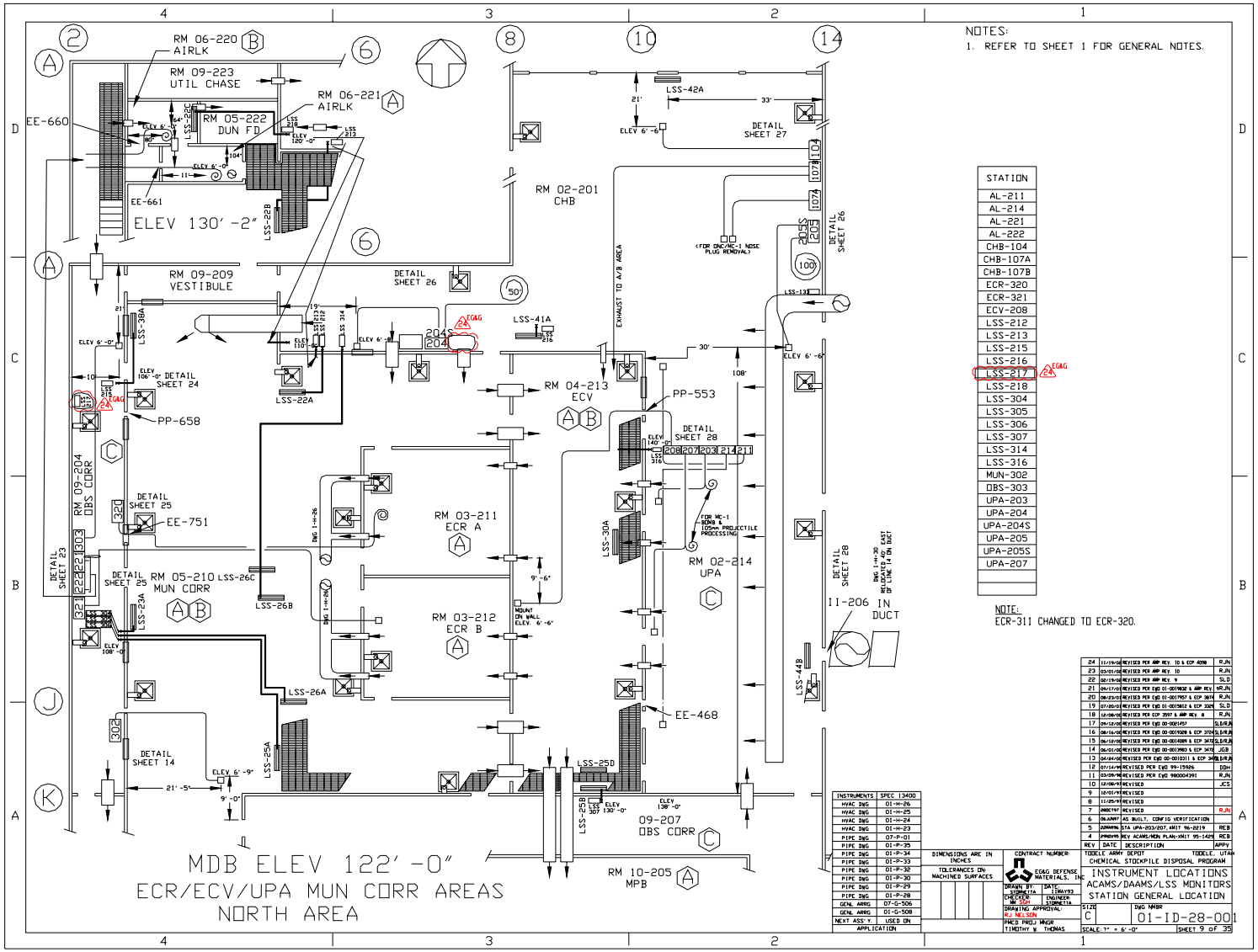

SEE SHEET 5
FIL-559
SEE SHEET 5
NOTES:
1. REFER TO SHEET 1 FOR GENERAL NOTES.
EE-815
HALON ROOM
OFFICE
COMM ROOM
PDAR ROOM
CONTROL ROOM
RM 08-110
EXHAUST
DUCT
ENGR/MAINT
ROOM
DAAMS-133
IN EXH DUCT
18"
7'-9"
DAAMS-220
ISO VALVE
MULTIPURPOSE
ROOM
OFFICE
OFFICE
TOILET
TOILET
MDB ELEV 100'-0"
SOUTH WEST
TOOELE ARMY DEPOT
TOOELE, UTAH
CHEMICAL STOCKPILE DISPOSAL PROGRAM
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION
01-ID-28-001
SCALE: 1/2" = 1'-0" ACAD11 SHEET 7 OF 35

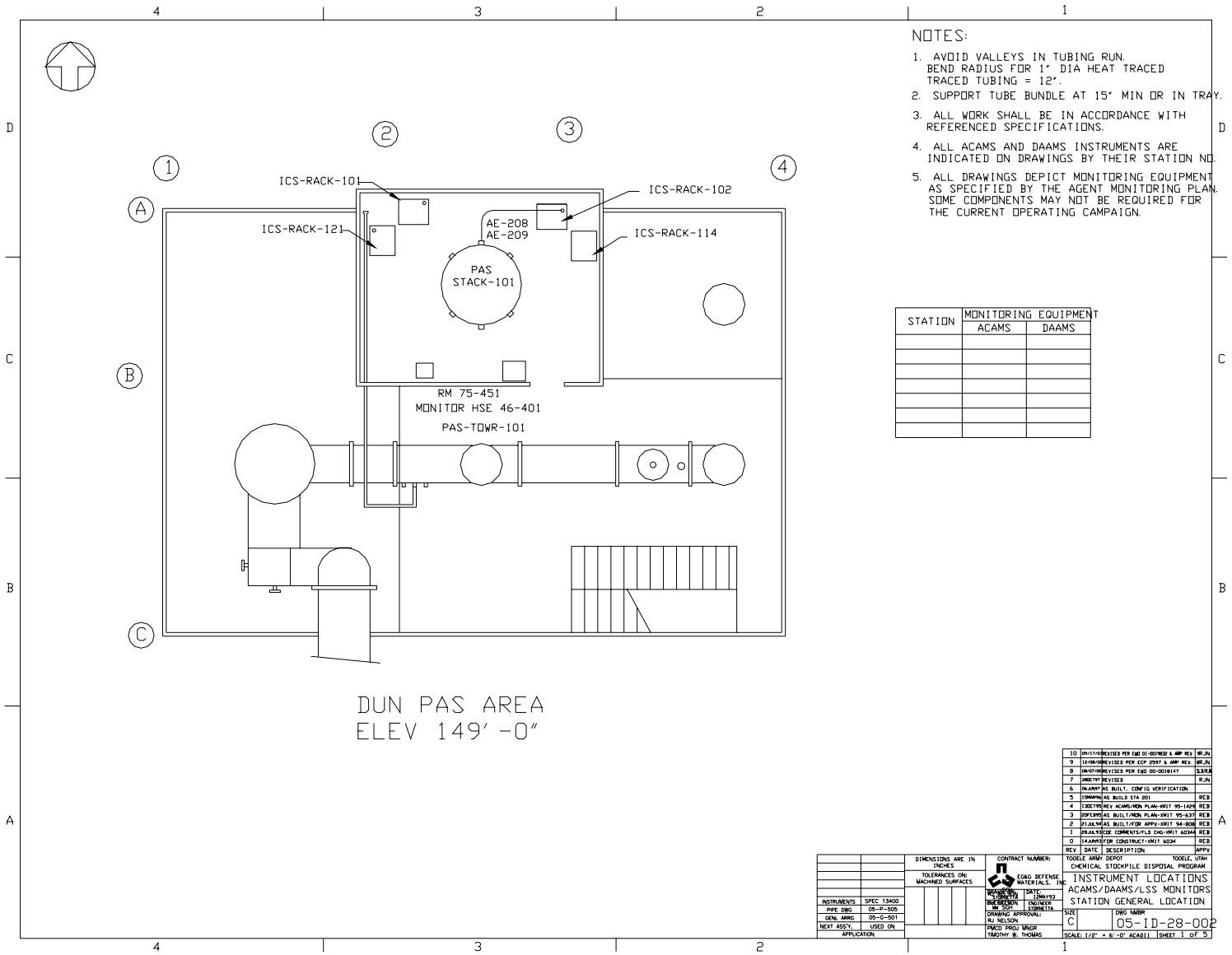


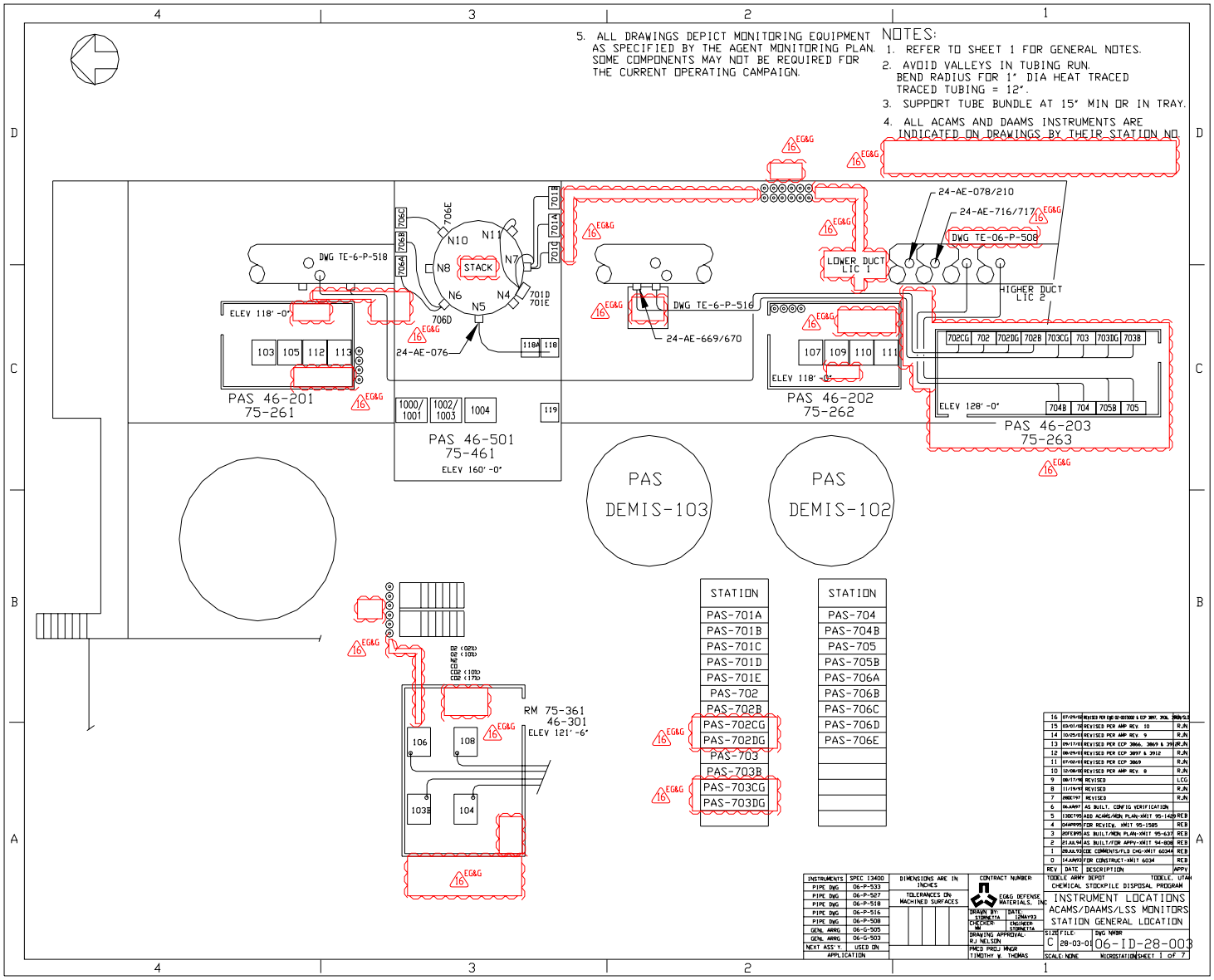
STATION
AL-428
AL-429
AL-430
AL-430
DPE-427
DUC-402
LSS-265
LSS-309
LSS-318
LSS-406
LSS-409
LSS-413
LSS-414
LSS-423
LSS-424
LSS-425
MUN-317
OBS-403
OBS-403S
OBS-404
OBS-404S
OBS-407
OBS-408
OBS-408S

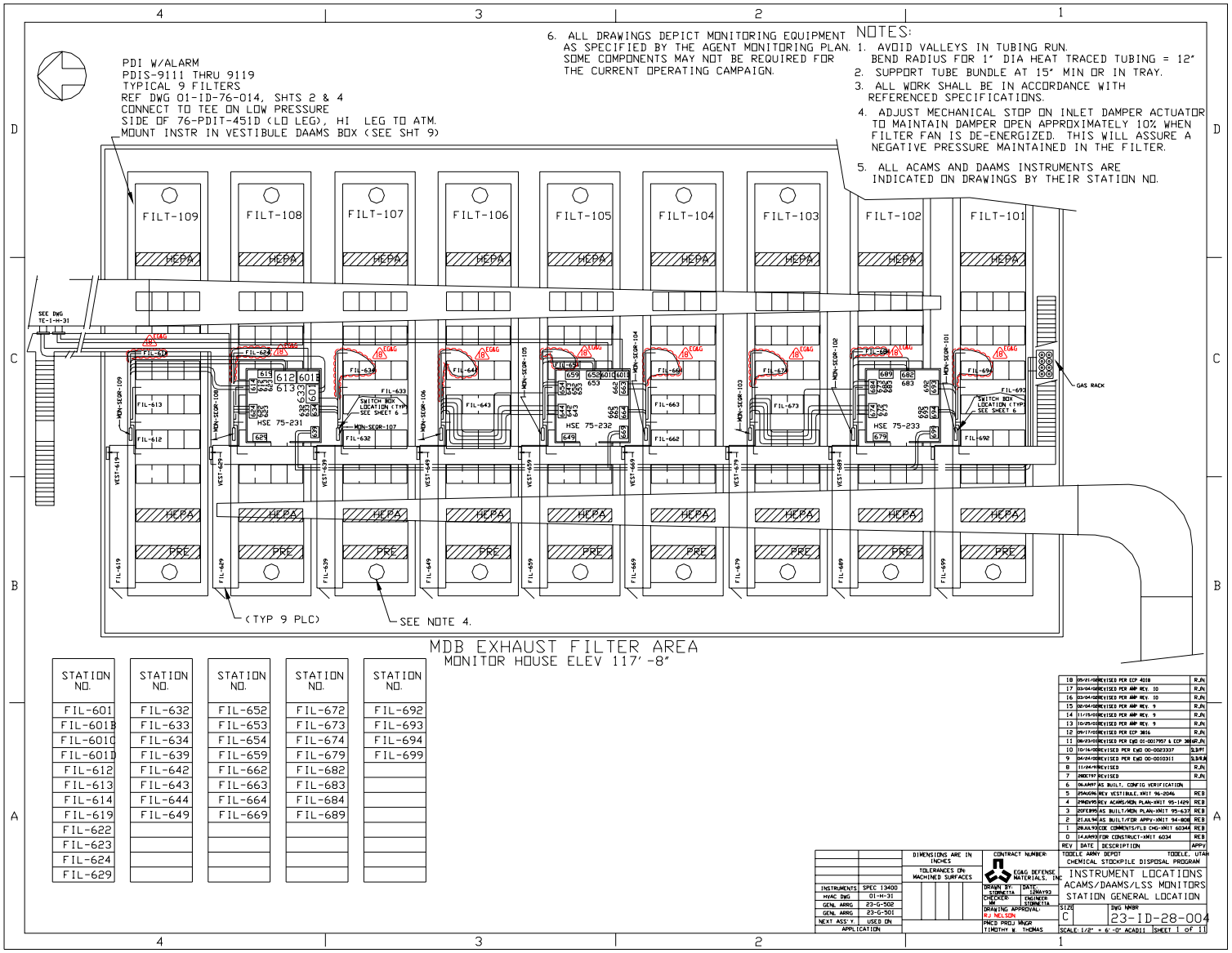
NOTES:

1. REFER TO SHEET 1 FOR GENERAL NOTES.
2. ALL DUAL AGENT MONITORED ACAMS STATIONS ARE LOCATED NEXT TO EACH OTHER EXCEPT THIS ONE.


NOTES:
1. REFER TO SHEET 1 FOR GENERAL NOTES.
RM 06-220 AIRLK
RM 09-223 UTIL CHASE
RM 06-221 AIRLK
RM 05-222 DUN FD
EE-660
EE-661
ELEV 130' -2"
RM 09-209 VESTIBULE
RM 09-204 OBS CORR
RM 05-210 MUN CORR
RM 02-201 CHB
RM 04-213 ECV
RM 03-211 ECR A
RM 03-212 ECR B
RM 02-214 UPA
09-207 OBS CORR
RM 10-205 MPB
PP-658
PP-553
EE-751
EE-468
LSS-42A
LSS-41A
LSS-22A
LSS-22B
LSS-23A
LSS-25A
LSS-25B
LSS-26A
LSS-26B
LSS-26C
LSS-30A
LSS-44B
DETAIL SHEET 26
DETAIL SHEET 27
DETAIL SHEET 28
DETAIL SHEET 25
DETAIL SHEET 24
DETAIL SHEET 14
EXHAUST TO A/B AREA
II-206 IN DUCT
MDB ELEV 122' -0"
ECR/ECV/UPA MUN CORR AREAS
NORTH AREA
STATION
AL-211
AL-214
AL-221
AL-222
CHB-104
CHB-107A
CHB-107B
ECR-320
ECR-321
ECV-208
LSS-212
LSS-213
LSS-215
LSS-216
LSS-217
LSS-218
LSS-304
LSS-305
LSS-306
LSS-307
LSS-314
LSS-316
MUN-302
OBS-303
UPA-203
UPA-204
UPA-204S
UPA-205
UPA-205S
UPA-207
NOTE:
ECR-311 CHANGED TO ECR-320.
CHEMICAL STOCKPILE DISPOSAL PROGRAM
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION
DWG NMBR
01-ID-28-001
SHEET 9 OF 35


NOTES:
1. AVOID VALLEYS IN TUBING RUN. BEND RADIUS FOR 1" DIA HEAT TRACED TRACED TUBING = 12".
2. SUPPORT TUBE BUNDLE AT 15" MIN OR IN TRAY.
3. ALL WORK SHALL BE IN ACCORDANCE WITH REFERENCED SPECIFICATIONS.
4. ALL ACAMS AND DAAMS INSTRUMENTS ARE INDICATED ON DRAWINGS BY THEIR STATION NO.
5. ALL DRAWINGS DEPICT MONITORING EQUIPMENT AS SPECIFIED BY THE AGENT MONITORING PLAN. SOME COMPONENTS MAY NOT BE REQUIRED FOR THE CURRENT OPERATING CAMPAIGN.
ICS-RACK-101
ICS-RACK-102
ICS-RACK-121
ICS-RACK-114
AE-208
AE-209
PAS STACK-101
RM 75-451
MONITOR HSE 46-401
PAS-TOWR-101
DUN PAS AREA
ELEV 149'-0"
STATION
MONITORING EQUIPMENT
ACAMS
DAAMS
INSTRUMENTS SPEC 13400
PIPE DWG 05-P-505
GENL ARRG 05-G-501
NEXT ASS'Y USED ON
APPLICATION
DIMENSIONS ARE IN INCHES
TOLERANCES ON: MACHINED SURFACES
CONTRACT NUMBER:
EG&G DEFENSE MATERIALS, INC
DRAWING APPROVAL:
RJ NELSON
PROJ MNGR
TIMOTHY W. THOMAS
TOOELE ARMY DEPOT
TOOELE, UTAH
CHEMICAL STOCKPILE DISPOSAL PROGRAM
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION
SIZE C
DWG NMBR 05-ID-28-002
SCALE: 1/2" = 1'-0" ACAD11 SHEET 1 OF 5


NOTES:
1. REFER TO SHEET 1 FOR GENERAL NOTES.
2. AVOID VALLEYS IN TUBING RUN. BEND RADIUS FOR 1" DIA HEAT TRACED TRACED TUBING = 12".
3. SUPPORT TUBE BUNDLE AT 15" MIN OR IN TRAY.
4. ALL ACAMS AND DAAMS INSTRUMENTS ARE INDICATED ON DRAWINGS BY THEIR STATION NO.
5. ALL DRAWINGS DEPICT MONITORING EQUIPMENT AS SPECIFIED BY THE AGENT MONITORING PLAN. SOME COMPONENTS MAY NOT BE REQUIRED FOR THE CURRENT OPERATING CAMPAIGN.
PAS 46-201 75-261
PAS 46-501 75-461
ELEV 160' -0"
PAS 46-202 75-262
PAS 46-203 75-263
ELEV 128' -0"
ELEV 118' -0"
ELEV 121' -6"
LOWER DUCT LIC 1
HIGHER DUCT LIC 2
DWG TE-6-P-518
DWG TE-6-P-516
DWG TE-06-P-508
24-AE-078/210
24-AE-716/717
24-AE-669/670
24-AE-076
STACK
PAS DEMIS-103
PAS DEMIS-102
RM 75-361 46-301
STATION
PAS-701A
PAS-701B
PAS-701C
PAS-701D
PAS-701E
PAS-702
PAS-702B
PAS-702CG
PAS-702DG
PAS-703
PAS-703B
PAS-703CG
PAS-703DG
STATION
PAS-704
PAS-704B
PAS-705
PAS-705B
PAS-706A
PAS-706B
PAS-706C
PAS-706D
PAS-706E
INSTRUMENT LOCATIONS ACAMS/DAAMS/LSS MONITORS STATION GENERAL LOCATION
CHEMICAL STOCKPILE DISPOSAL PROGRAM
EG&G DEFENSE MATERIALS, INC.
06-ID-28-003



STATION NO.	STATION NO.	STATION NO.	STATION NO.	STATION NO.
FIL-601	FIL-632	FIL-652	FIL-672	FIL-692
FIL-601B	FIL-633	FIL-653	FIL-673	FIL-693
FIL-601C	FIL-634	FIL-654	FIL-674	FIL-694
FIL-601D	FIL-639	FIL-659	FIL-679	FIL-699
FIL-612	FIL-642	FIL-662	FIL-682	
FIL-613	FIL-643	FIL-663	FIL-683	
FIL-614	FIL-644	FIL-664	FIL-684	
FIL-619	FIL-649	FIL-669	FIL-689	
FIL-622				
FIL-623				
FIL-624				
FIL-629				

REV	DATE	DESCRIPTION	APPV
18	05/01-08	REVISED PER ECP 4018	RJN
17	03/04-08	REVISED PER AMP REV. 10	RJN
16	03/04-08	REVISED PER AMP REV. 10	RJN
15	02/04-08	REVISED PER AMP REV. 9	RJN
14	11/15-07	REVISED PER AMP REV. 9	RJN
13	10/25-07	REVISED PER AMP REV. 9	RJN
12	09/17-08	REVISED PER ECP 3816	RJN
11	08/23-06	REVISED PER EWO 01-0017957 & ECP 3816	MRJN
10	10/16-00	REVISED PER EWO 00-0002337	BJMT
9	04/24-00	REVISED PER EWO 00-0010311	BJMT
8	11/04-98	REVISED	RJN
7	2DEC197	REVISED	RJN
6	06JAN97	AS BUILT, CONFIG VERIFICATION	
5	25MAY96	REV VESTIBULE, XMIT 96-0546	REB
4	29NOV95	REV ACAMS/MDB PLAN-XMIT 95-1429	REB
3	20FEB95	AS BUILT/MDB PLAN-XMIT 95-637	REB
2	21JUL94	AS BUILT/FDR APPV-XMIT 94-808	REB
1	08JUL93	DOE COMMENTS/FLD CHG-XMIT 6034	REB
0	14JAN93	FOR CONSTRUCT-XMIT 6034	REB

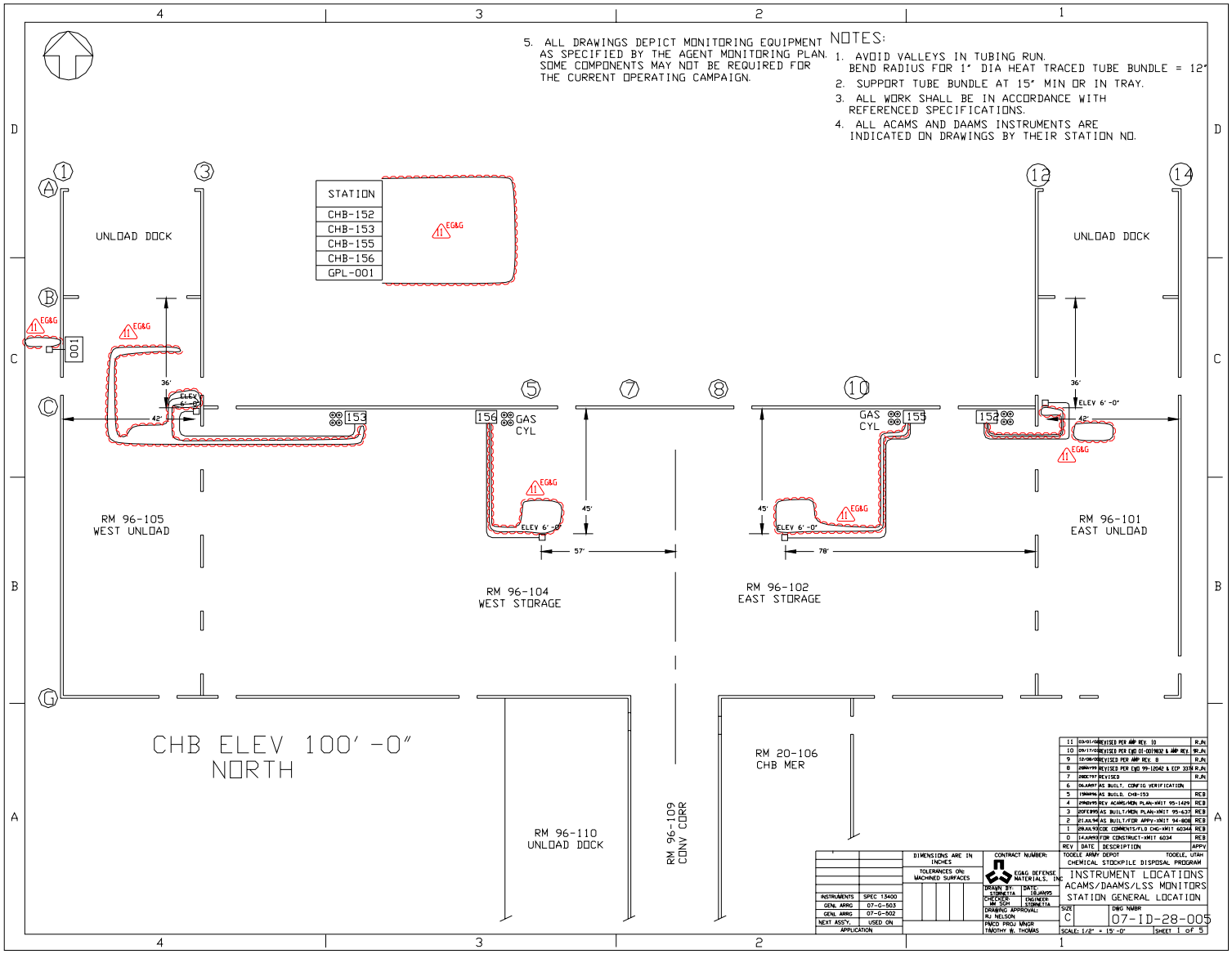
INSTRUMENTS	SPEC 13400
HVAC DWG	01-M-31
GENL ARRG	23-G-502
GENL ARRG	23-G-501
NEXT ASS'Y APPLICATION	USED ON

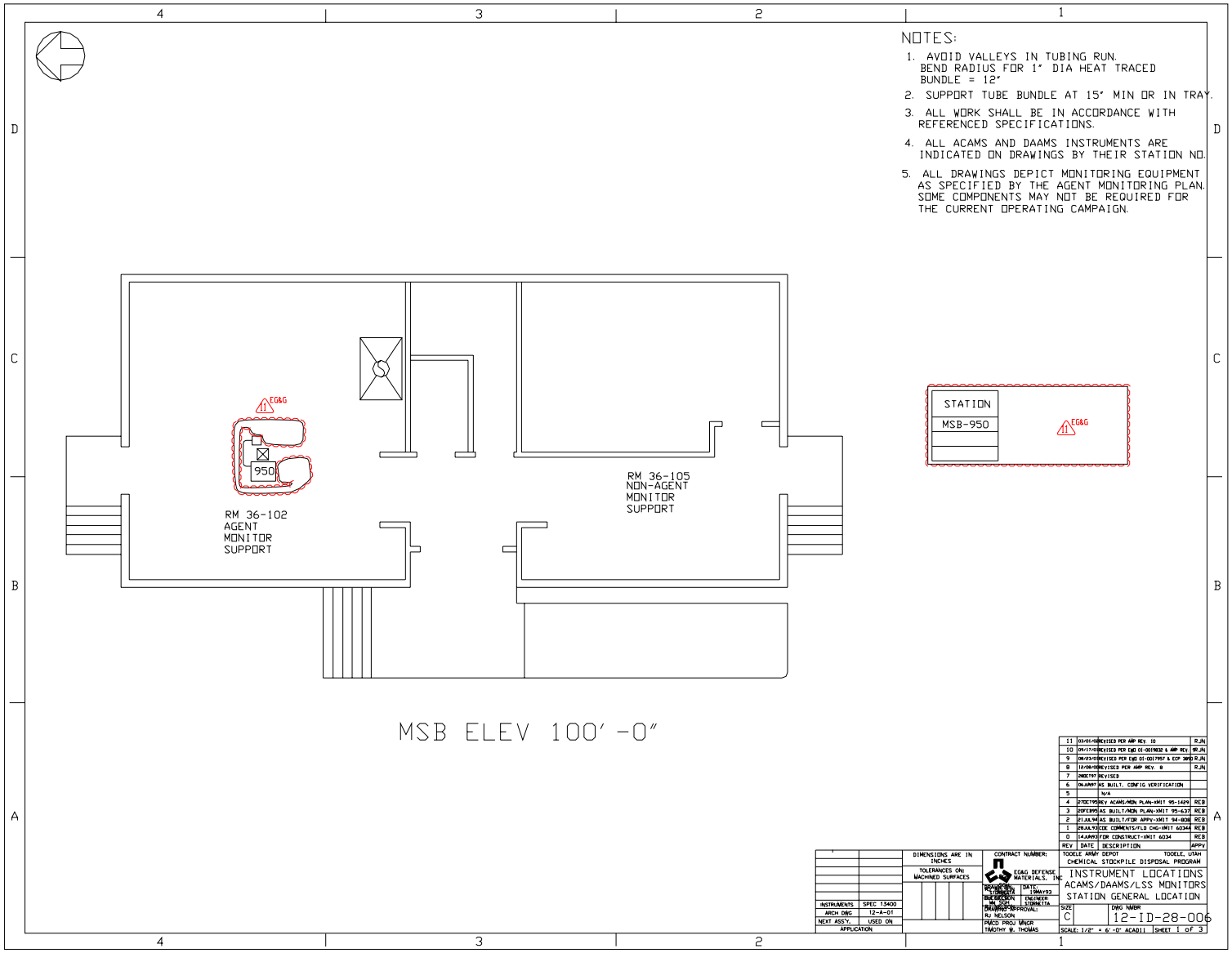
DIMENSIONS ARE IN INCHES
TOLERANCES ON MACHINED SURFACES

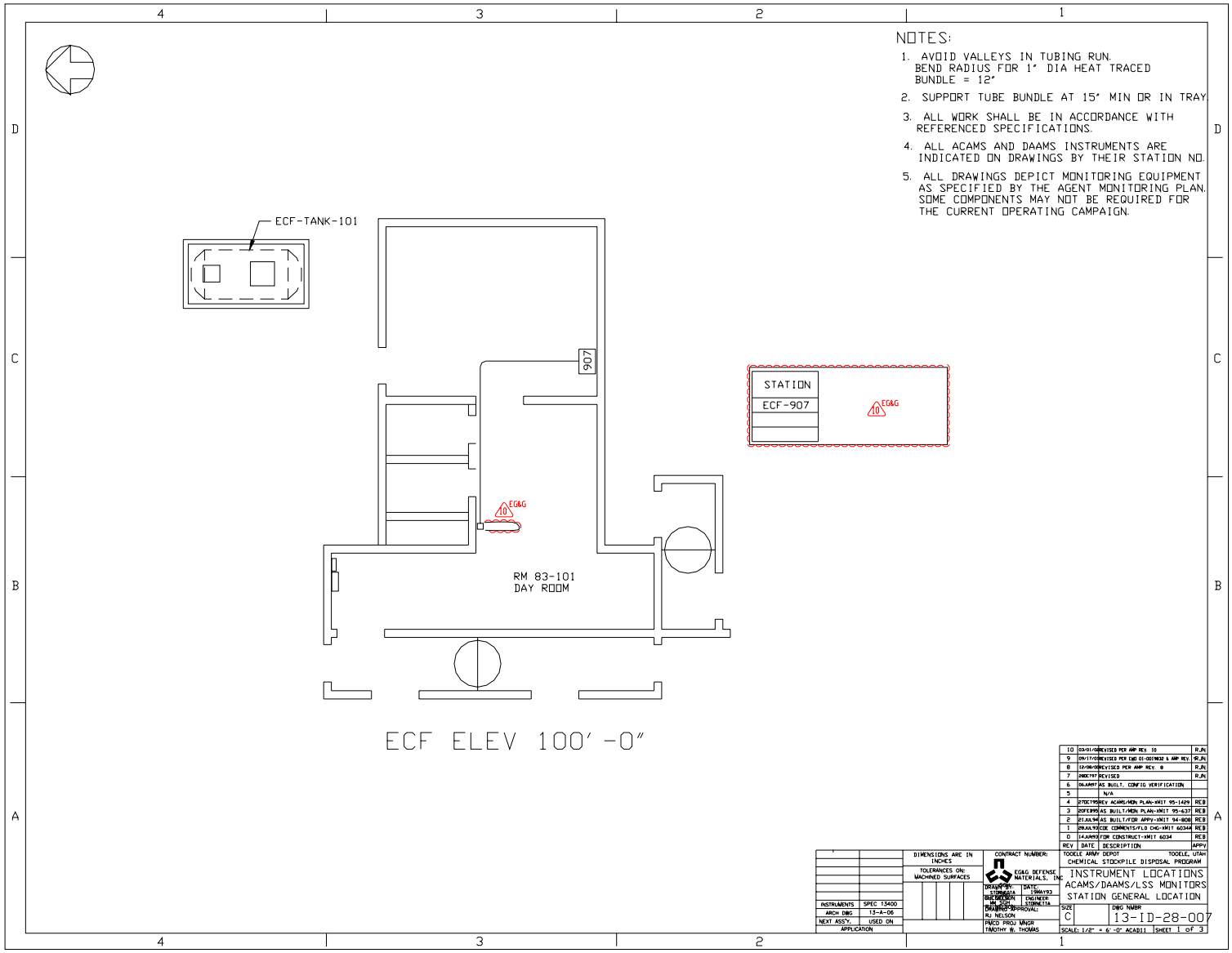
CONTRACT NUMBER:
EG&G DEFENSE MATERIALS, INC.
DRAWN BY: TOMMASETA DATE: 13MAY93
CHECKED BY: ENGINEER: TOMMASETA
DRAWING APPROVAL: W.J. NELSON
PROJ MGR TIMOTHY W. THOMAS

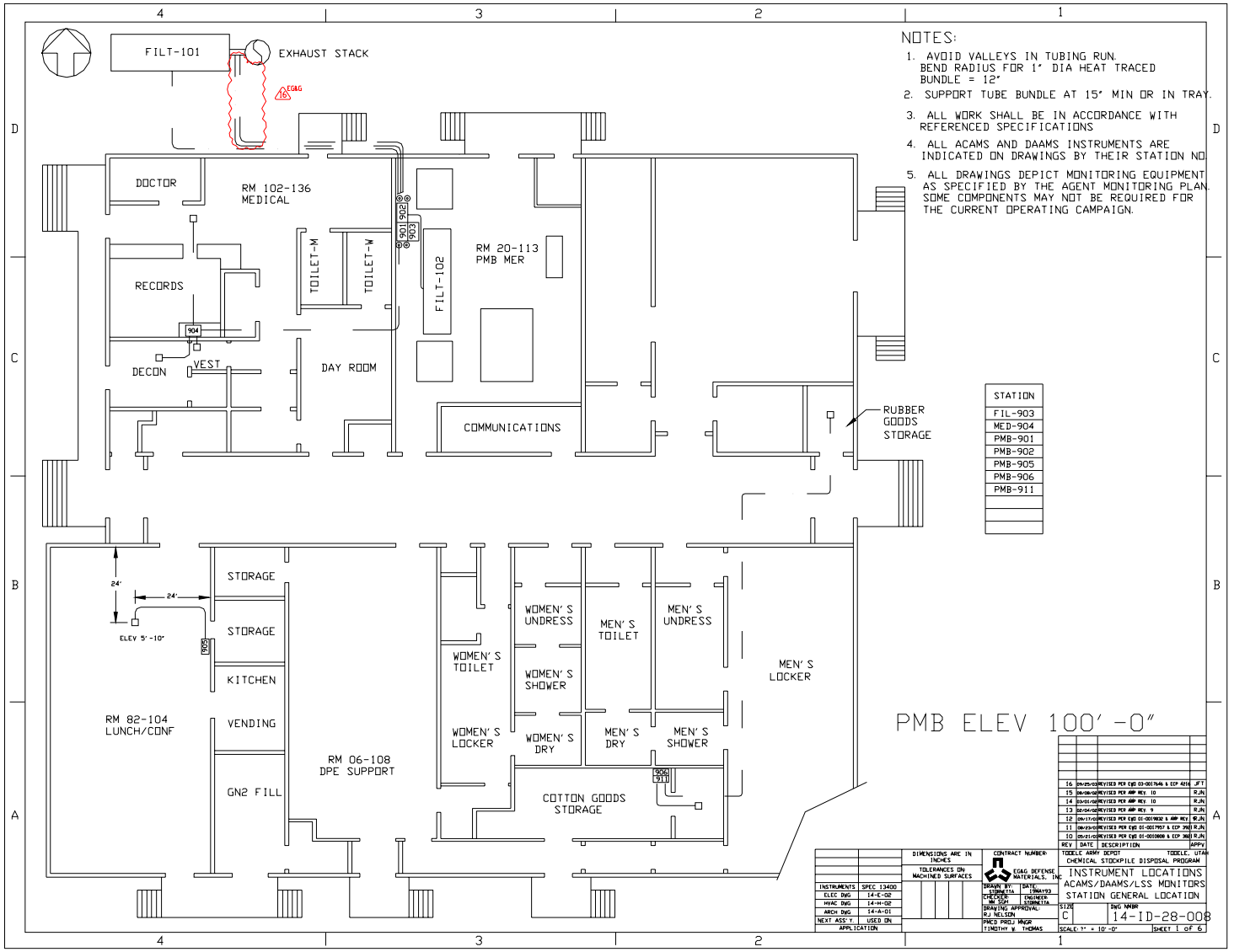
TOOELE ARMY DEPOT TOOELE, UTAH
CHEMICAL STOCKPILE DISPOSAL PROGRAM
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION

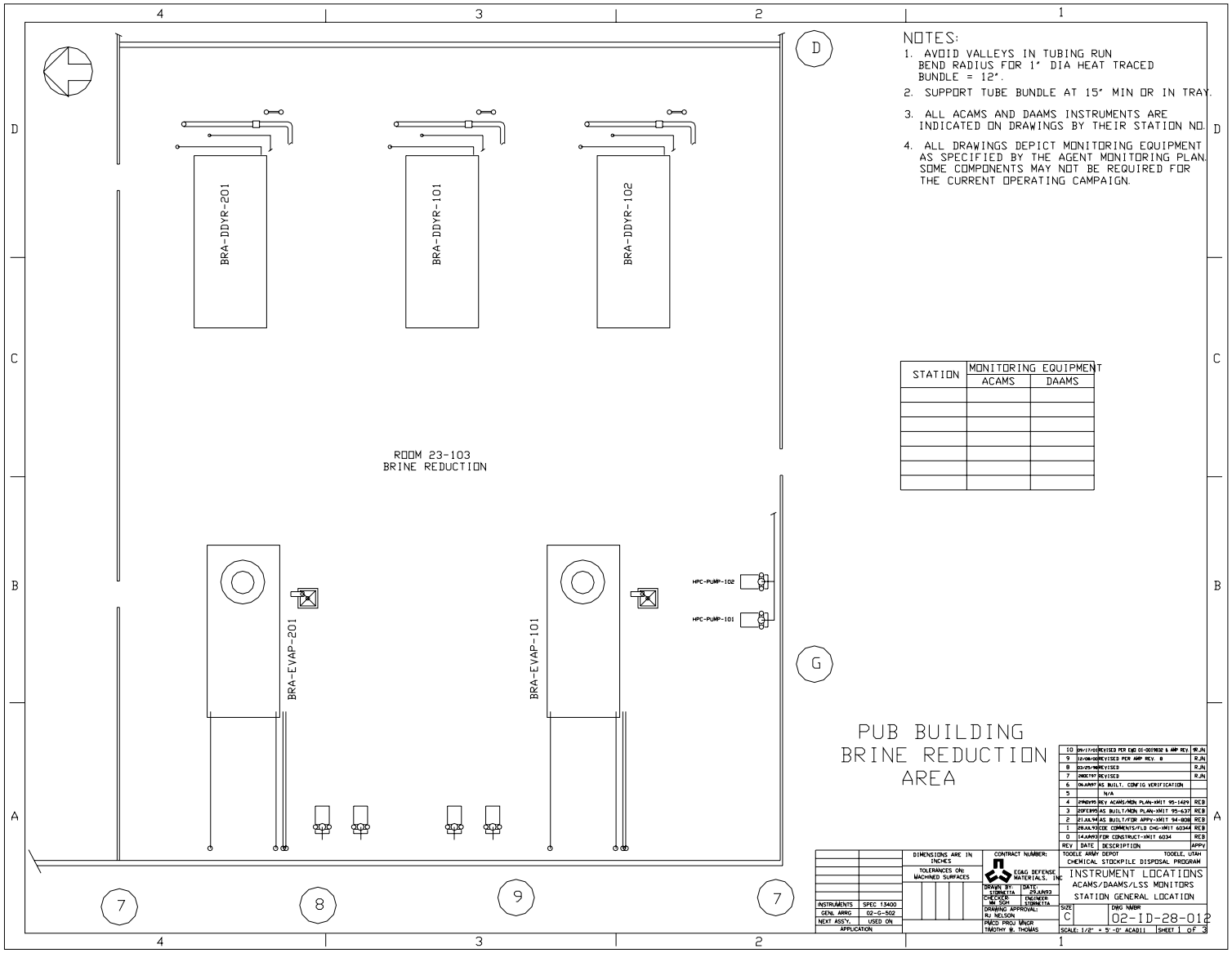
SIZE C | DWG NMBR 23-ID-28-004
SCALE: 1/2" = 1'-0" ACAD11 SHEET 1 OF 11

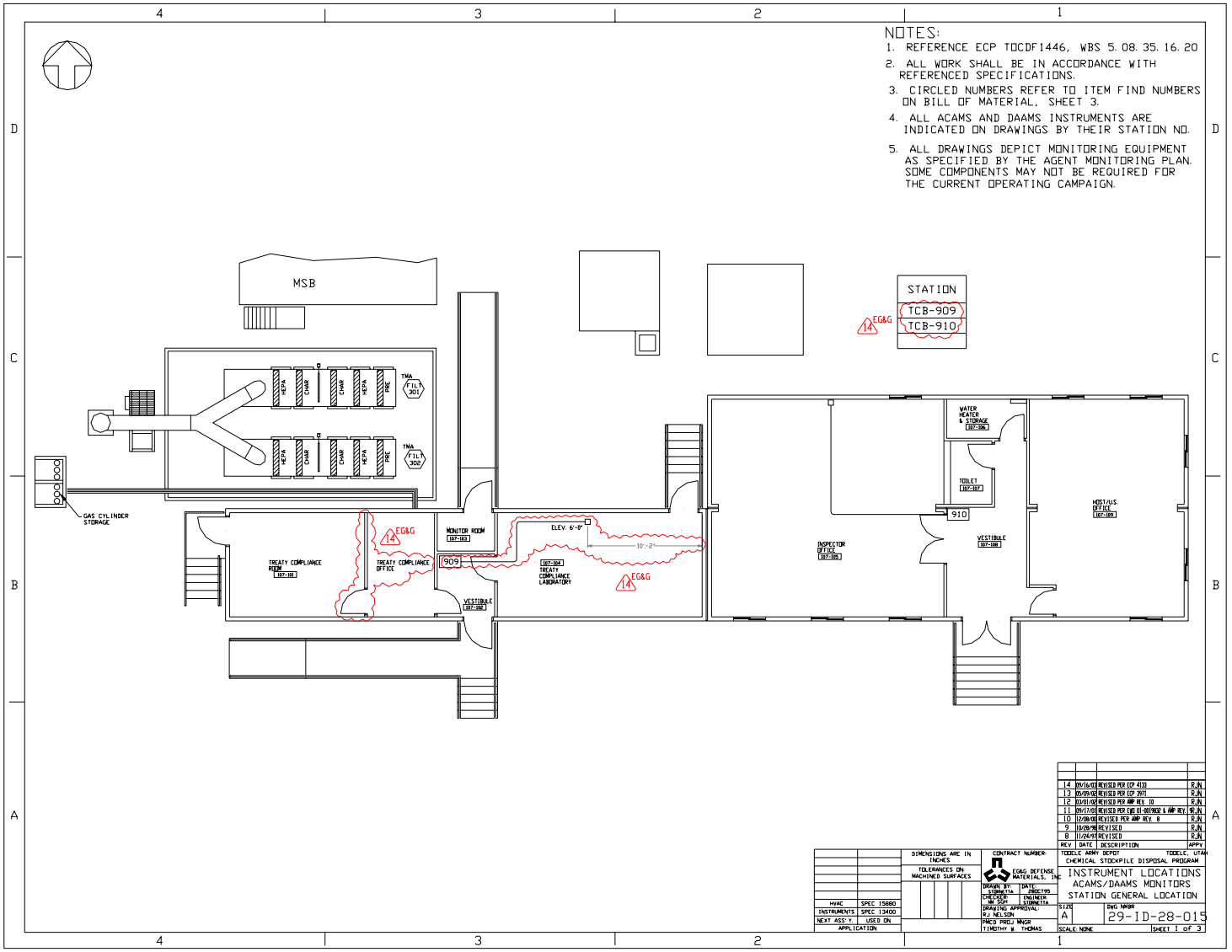

NOTES:
1. AVOID VALLEYS IN TUBING RUN. BEND RADIUS FOR 1" DIA HEAT TRACED TUBE BUNDLE = 12"
2. SUPPORT TUBE BUNDLE AT 15' MIN OR IN TRAY.
3. ALL WORK SHALL BE IN ACCORDANCE WITH REFERENCED SPECIFICATIONS.
4. ALL ACAMS AND DAAMS INSTRUMENTS ARE INDICATED ON DRAWINGS BY THEIR STATION NO.
5. ALL DRAWINGS DEPICT MONITORING EQUIPMENT AS SPECIFIED BY THE AGENT MONITORING PLAN. SOME COMPONENTS MAY NOT BE REQUIRED FOR THE CURRENT OPERATING CAMPAIGN.
STATION
CHB-152
CHB-153
CHB-155
CHB-156
GPL-001
UNLOAD DOCK
UNLOAD DOCK
RM 96-105
WEST UNLOAD
RM 96-104
WEST STORAGE
RM 96-102
EAST STORAGE
RM 96-101
EAST UNLOAD
GAS CYL
GAS CYL
CHB ELEV 100'-0"
NORTH
RM 96-110
UNLOAD DOCK
RM 96-109
CONV CORR
RM 20-106
CHB MER
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION
TOOELE ARMY DEPOT
CHEMICAL STOCKPILE DISPOSAL PROGRAM
TOOELE, UTAH
EG&G DEFENSE MATERIALS, INC.
07-ID-28-005

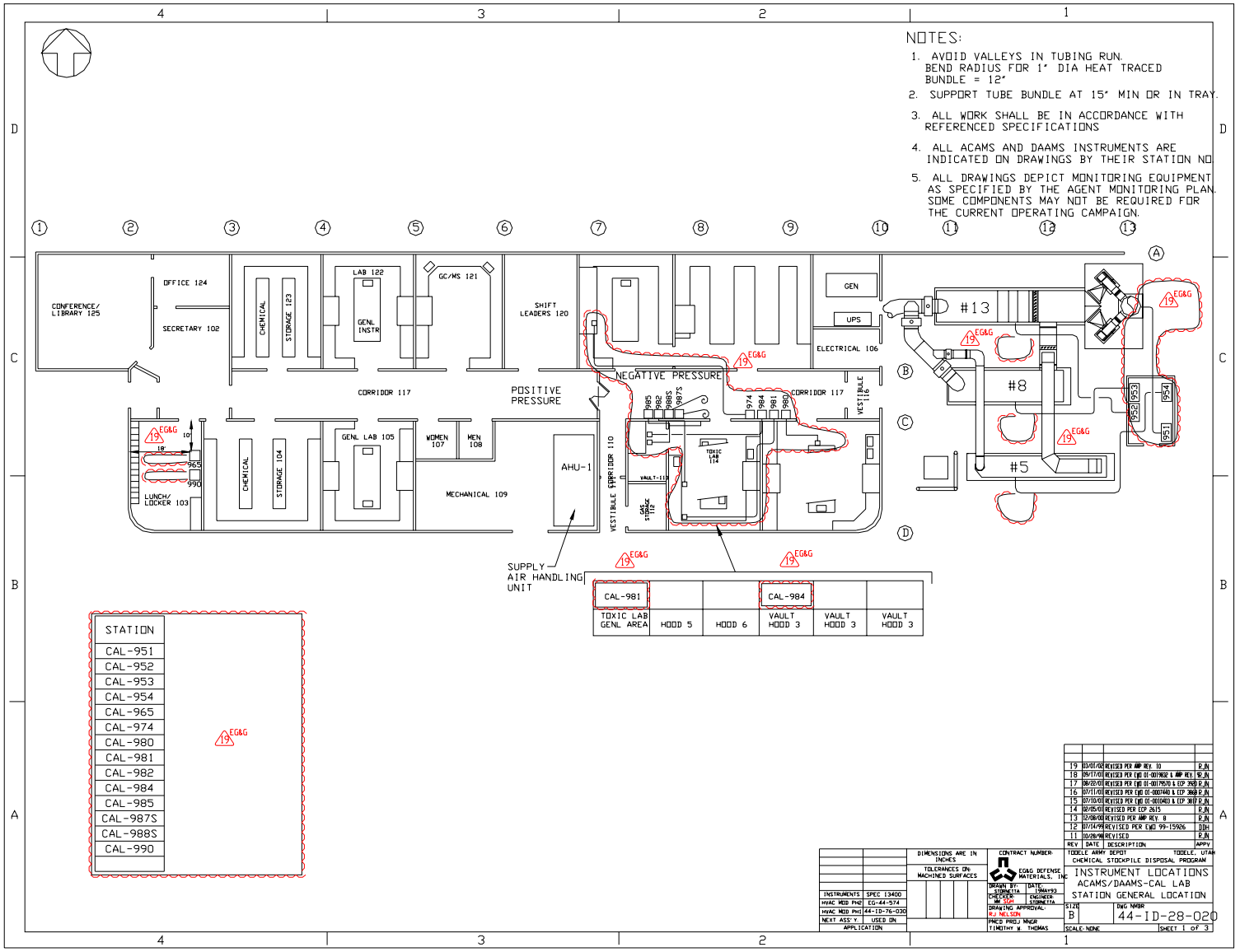

NOTES:
1. AVOID VALLEYS IN TUBING RUN. BEND RADIUS FOR 1" DIA HEAT TRACED BUNDLE = 12"
2. SUPPORT TUBE BUNDLE AT 15° MIN OR IN TRAY.
3. ALL WORK SHALL BE IN ACCORDANCE WITH REFERENCED SPECIFICATIONS.
4. ALL ACAMS AND DAAMS INSTRUMENTS ARE INDICATED ON DRAWINGS BY THEIR STATION NO.
5. ALL DRAWINGS DEPICT MONITORING EQUIPMENT AS SPECIFIED BY THE AGENT MONITORING PLAN. SOME COMPONENTS MAY NOT BE REQUIRED FOR THE CURRENT OPERATING CAMPAIGN.
STATION
MSB-950
EG&G
950
RM 36-102
AGENT
MONITOR
SUPPORT
RM 36-105
NON-AGENT
MONITOR
SUPPORT
MSB ELEV 100'-0"
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION
TOOELE ARMY DEPOT
CHEMICAL STOCKPILE DISPOSAL PROGRAM
TOOELE, UTAH
12-ID-28-006

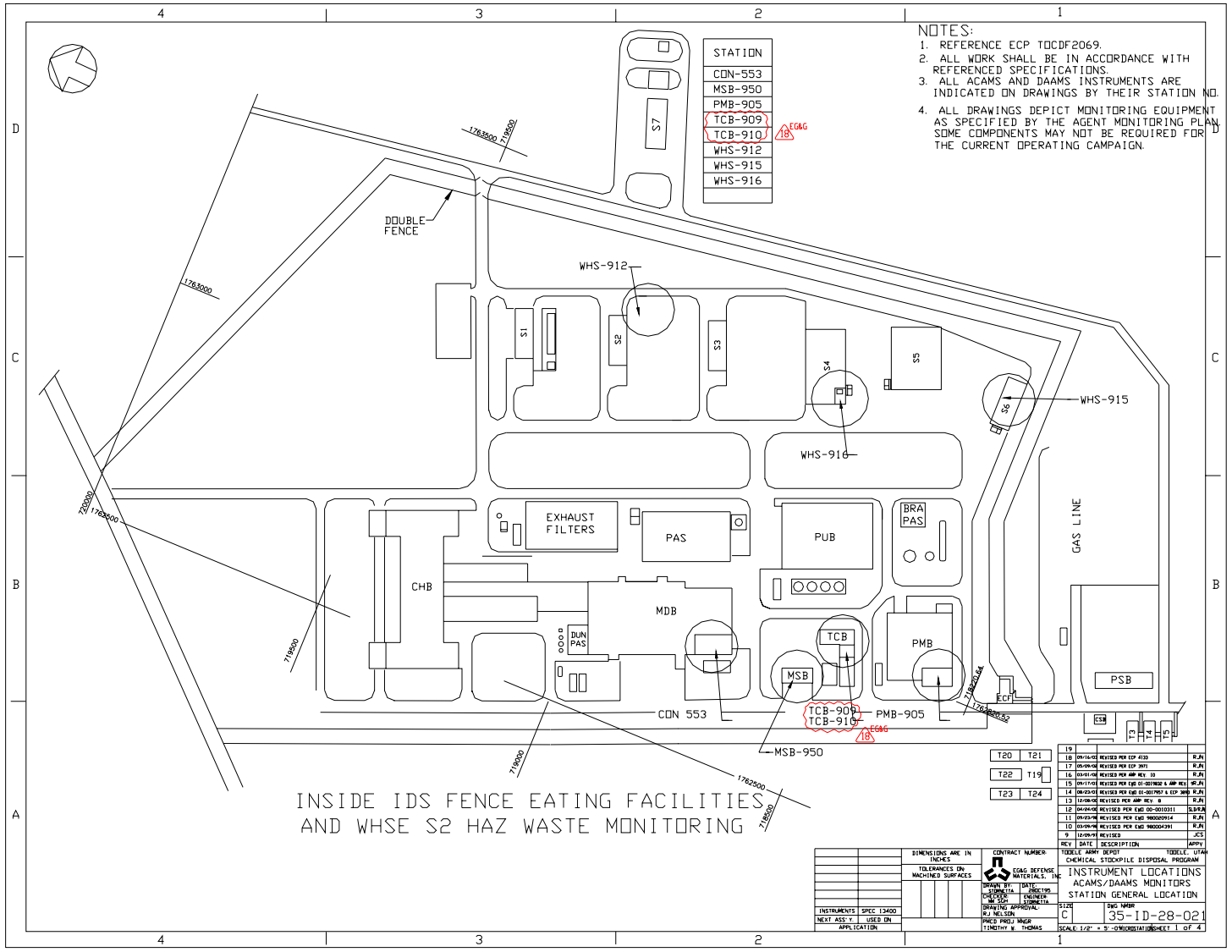

NOTES:
1. AVOID VALLEYS IN TUBING RUN. BEND RADIUS FOR 1" DIA HEAT TRACED BUNDLE = 12"
2. SUPPORT TUBE BUNDLE AT 15' MIN OR IN TRAY.
3. ALL WORK SHALL BE IN ACCORDANCE WITH REFERENCED SPECIFICATIONS.
4. ALL ACAMS AND DAAMS INSTRUMENTS ARE INDICATED ON DRAWINGS BY THEIR STATION NO.
5. ALL DRAWINGS DEPICT MONITORING EQUIPMENT AS SPECIFIED BY THE AGENT MONITORING PLAN. SOME COMPONENTS MAY NOT BE REQUIRED FOR THE CURRENT OPERATING CAMPAIGN.
ECF-TANK-101
907
STATION
ECF-907
EG&G
10
RM 83-101
DAY ROOM
ECF ELEV 100'-0"
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION
TOOELE ARMY DEPOT
CHEMICAL STOCKPILE DISPOSAL PROGRAM
TOOELE, UTAH
DWG NMBR
13-ID-28-007
SCALE: 1/2" = 1'-0" ACAD11
SHEET 1 OF 3


FILT-101
EXHAUST STACK
NOTES:
1. AVOID VALLEYS IN TUBING RUN. BEND RADIUS FOR 1" DIA HEAT TRACED BUNDLE = 12"
2. SUPPORT TUBE BUNDLE AT 15" MIN OR IN TRAY.
3. ALL WORK SHALL BE IN ACCORDANCE WITH REFERENCED SPECIFICATIONS
4. ALL ACAMS AND DAAMS INSTRUMENTS ARE INDICATED ON DRAWINGS BY THEIR STATION NO.
5. ALL DRAWINGS DEPICT MONITORING EQUIPMENT AS SPECIFIED BY THE AGENT MONITORING PLAN. SOME COMPONENTS MAY NOT BE REQUIRED FOR THE CURRENT OPERATING CAMPAIGN.
DOCTOR
RM 102-136 MEDICAL
RECORDS
DECON
VEST
DAY ROOM
TOILET-M
TOILET-W
FILT-102
RM 20-113 PMB MER
COMMUNICATIONS
RUBBER GOODS STORAGE
STATION
FIL-903
MED-904
PMB-901
PMB-902
PMB-905
PMB-906
PMB-911
STORAGE
STORAGE
KITCHEN
VENDING
GN2 FILL
RM 82-104 LUNCH/CONF
RM 06-108 DPE SUPPORT
WOMEN'S UNDRESS
WOMEN'S TOILET
WOMEN'S SHOWER
WOMEN'S LOCKER
WOMEN'S DRY
MEN'S TOILET
MEN'S UNDRESS
MEN'S LOCKER
MEN'S DRY
MEN'S SHOWER
COTTON GOODS STORAGE
PMB ELEV 100'-0"
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION
14-ID-28-008


NOTES:
1. AVOID VALLEYS IN TUBING RUN BEND RADIUS FOR 1" DIA HEAT TRACED BUNDLE = 12".
2. SUPPORT TUBE BUNDLE AT 15" MIN OR IN TRAY.
3. ALL ACAMS AND DAAMS INSTRUMENTS ARE INDICATED ON DRAWINGS BY THEIR STATION NO.
4. ALL DRAWINGS DEPICT MONITORING EQUIPMENT AS SPECIFIED BY THE AGENT MONITORING PLAN. SOME COMPONENTS MAY NOT BE REQUIRED FOR THE CURRENT OPERATING CAMPAIGN.
BRA-DDYR-201
BRA-DDYR-101
BRA-DDYR-102
ROOM 23-103
BRINE REDUCTION
BRA-EVAP-201
BRA-EVAP-101
HPC-PUMP-102
HPC-PUMP-101
STATION
MONITORING EQUIPMENT
ACAMS
DAAMS
PUB BUILDING
BRINE REDUCTION
AREA
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
STATION GENERAL LOCATION
TOOELE ARMY DEPOT
TOOELE, UTAH
CHEMICAL STOCKPILE DISPOSAL PROGRAM
EG&G DEFENSE MATERIALS, INC
02-ID-28-012

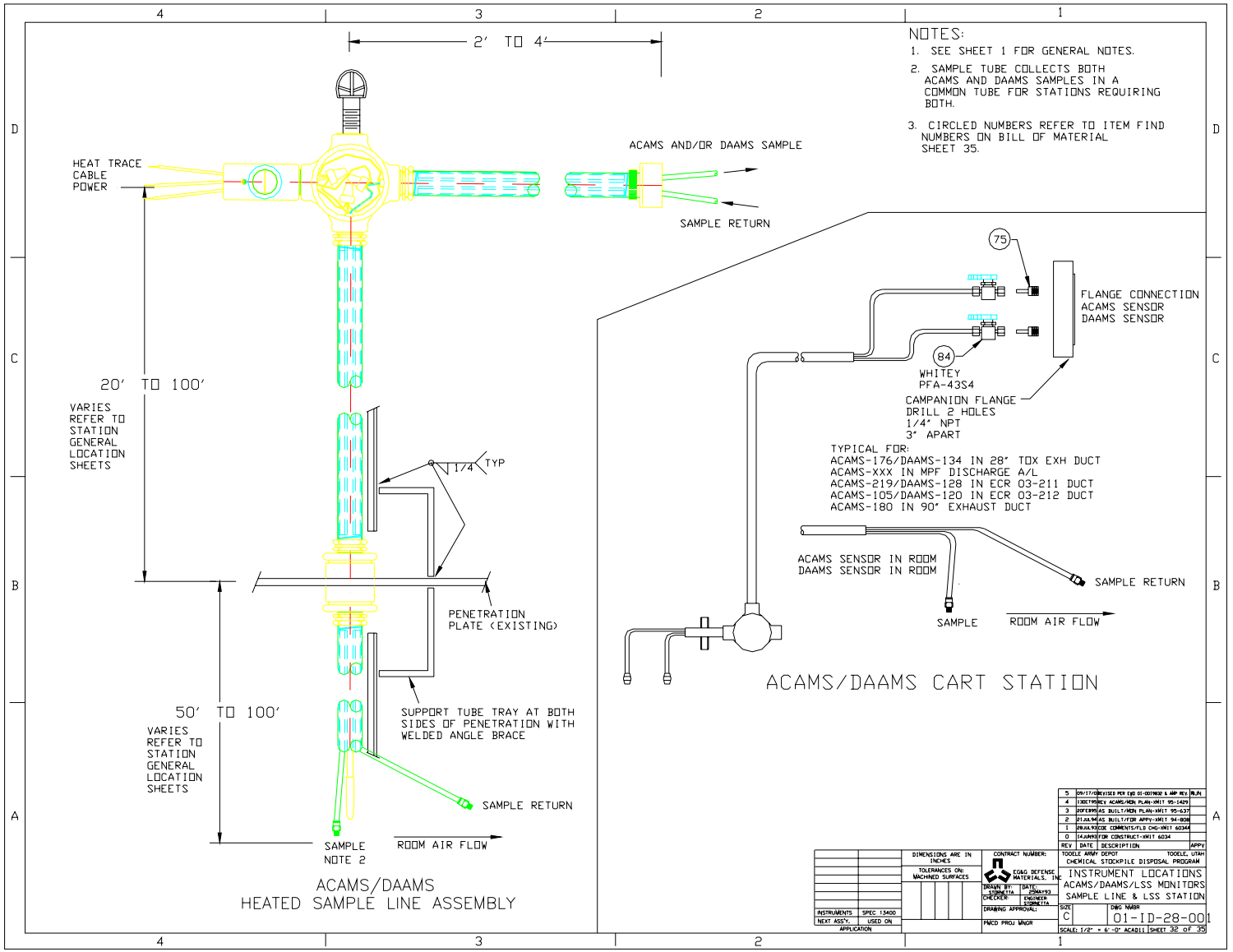

NOTES:
1. REFERENCE ECP TOCDF1446, WBS 5.08.35.16.20
2. ALL WORK SHALL BE IN ACCORDANCE WITH REFERENCED SPECIFICATIONS.
3. CIRCLED NUMBERS REFER TO ITEM FIND NUMBERS ON BILL OF MATERIAL, SHEET 3.
4. ALL ACAMS AND DAAMS INSTRUMENTS ARE INDICATED ON DRAWINGS BY THEIR STATION NO.
5. ALL DRAWINGS DEPICT MONITORING EQUIPMENT AS SPECIFIED BY THE AGENT MONITORING PLAN. SOME COMPONENTS MAY NOT BE REQUIRED FOR THE CURRENT OPERATING CAMPAIGN.
MSB
STATION
TCB-909
TCB-910
EG&G
GAS CYLINDER STORAGE
TREATY COMPLIANCE ROOM
TREATY COMPLIANCE OFFICE
MONITOR ROOM
VESTIBULE
TREATY COMPLIANCE LABORATORY
ELEV. 6'-8"
INSPECTOR OFFICE
WATER HEATER & STORAGE
TOILET
VESTIBULE
HOST/US OFFICE
910
909
TOCDF ARMY DEPOT
TOOELE, UTAH
CHEMICAL STOCKPILE DISPOSAL PROGRAM
INSTRUMENT LOCATIONS
ACAMS/DAAMS MONITORS
STATION GENERAL LOCATION
29-ID-28-015


NOTES:
1. AVOID VALLEYS IN TUBING RUN. BEND RADIUS FOR 1" DIA HEAT TRACED BUNDLE = 12"
2. SUPPORT TUBE BUNDLE AT 15" MIN OR IN TRAY.
3. ALL WORK SHALL BE IN ACCORDANCE WITH REFERENCED SPECIFICATIONS
4. ALL ACAMS AND DAAMS INSTRUMENTS ARE INDICATED ON DRAWINGS BY THEIR STATION NO.
5. ALL DRAWINGS DEPICT MONITORING EQUIPMENT AS SPECIFIED BY THE AGENT MONITORING PLAN. SOME COMPONENTS MAY NOT BE REQUIRED FOR THE CURRENT OPERATING CAMPAIGN.
CONFERENCE/ LIBRARY 125
OFFICE 124
SECRETARY 102
CHEMICAL
STORAGE 123
LAB 122
GENL INSTR
GC/MS 121
SHIFT LEADERS 120
GEN
UPS
ELECTRICAL 106
#13
#8
#5
CORRIDOR 117
POSITIVE PRESSURE
NEGATIVE PRESSURE
VESTIBULE 116
LUNCH/ LOCKER 103
CHEMICAL
STORAGE 104
GENL LAB 105
WOMEN 107
MEN 108
MECHANICAL 109
AHU-1
VESTIBULE CORRIDOR 110
TOXIC LAB 114
VAULT 113
GAS STORAGE 112
EG&G
SUPPLY AIR HANDLING UNIT
CAL-981
CAL-984
TOXIC LAB GENL AREA
HOOD 5
HOOD 6
VAULT HOOD 3
VAULT HOOD 3
VAULT HOOD 3
STATION
CAL-951
CAL-952
CAL-953
CAL-954
CAL-965
CAL-974
CAL-980
CAL-981
CAL-982
CAL-984
CAL-985
CAL-987S
CAL-988S
CAL-990
INSTRUMENT LOCATIONS
ACAMS/DAAMS-CAL LAB
STATION GENERAL LOCATION
TOOELE ARMY DEPOT
TOOELE, UTAH
CHEMICAL STOCKPILE DISPOSAL PROGRAM
EG&G DEFENSE MATERIALS, INC.
SIZE B
DWG NUMBR 44-ID-28-020
SCALE: NONE
SHEET 1 OF 3


NOTES:
1. REFERENCE ECP TOCDF2069.
2. ALL WORK SHALL BE IN ACCORDANCE WITH REFERENCED SPECIFICATIONS.
3. ALL ACAMS AND DAAMS INSTRUMENTS ARE INDICATED ON DRAWINGS BY THEIR STATION NO.
4. ALL DRAWINGS DEPICT MONITORING EQUIPMENT AS SPECIFIED BY THE AGENT MONITORING PLAN. SOME COMPONENTS MAY NOT BE REQUIRED FOR THE CURRENT OPERATING CAMPAIGN.
STATION
CON-553
MSB-950
PMB-905
TCB-909
TCB-910
WHS-912
WHS-915
WHS-916
DOUBLE FENCE
WHS-912
WHS-915
WHS-916
EXHAUST FILTERS
PAS
PUB
BRA PAS
CHB
MDB
DUN PAS
TCB
PMB
MSB
PSB
GAS LINE
ECF
CON 553
TCB-909
TCB-910
PMB-905
MSB-950
INSIDE IDS FENCE EATING FACILITIES
AND WHSE S2 HAZ WASTE MONITORING
INSTRUMENT LOCATIONS
ACAMS/DAAMS MONITORS
STATION GENERAL LOCATION
35-ID-28-021

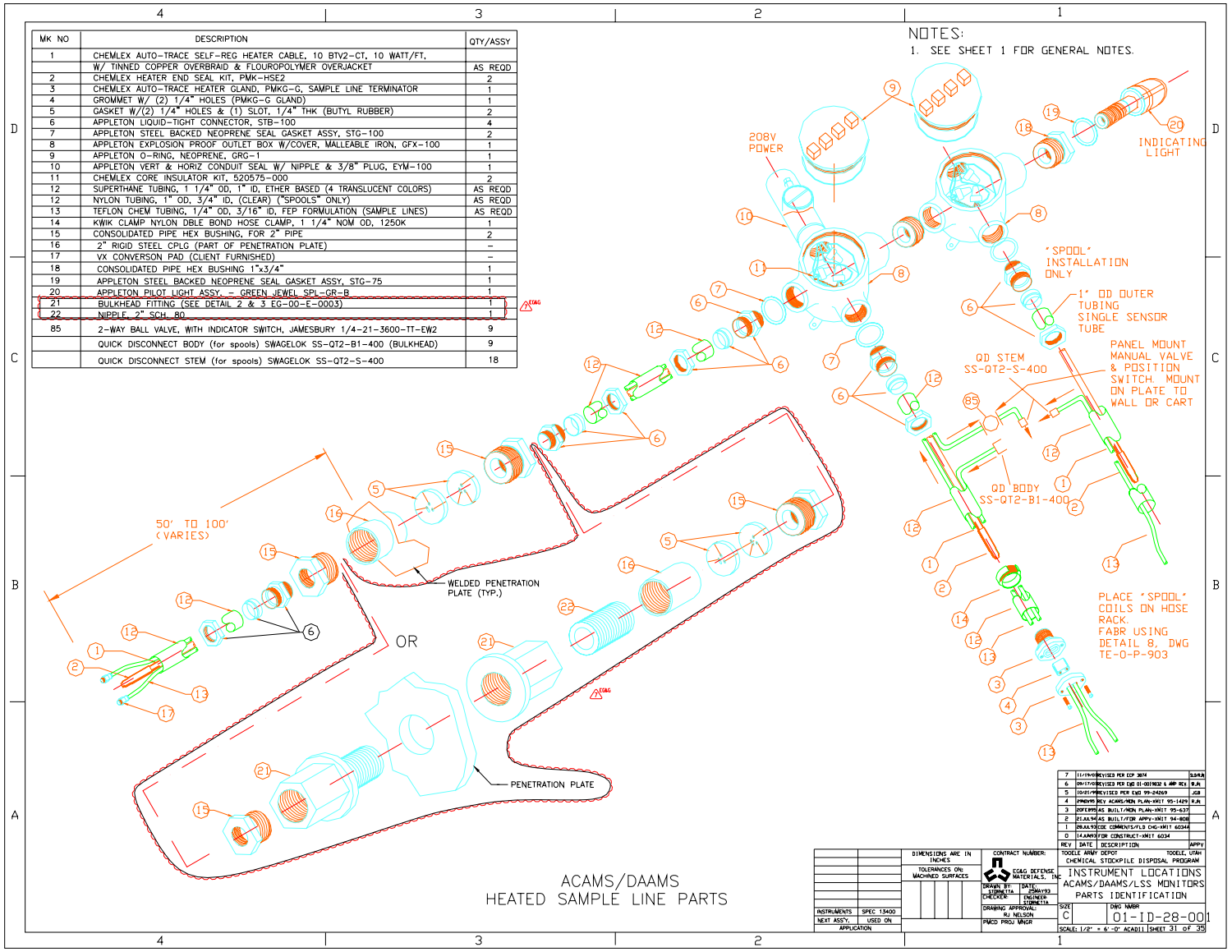
APPENDIX C

HEATED SAMPLE LINE ASSEMBLY DRAWING


2' TO 4'
NOTES:
1. SEE SHEET 1 FOR GENERAL NOTES.
2. SAMPLE TUBE COLLECTS BOTH ACAMS AND DAAMS SAMPLES IN A COMMON TUBE FOR STATIONS REQUIRING BOTH.
3. CIRCLED NUMBERS REFER TO ITEM FIND NUMBERS ON BILL OF MATERIAL SHEET 35.
HEAT TRACE CABLE POWER
ACAMS AND/OR DAAMS SAMPLE
SAMPLE RETURN
20' TO 100'
VARIES REFER TO STATION GENERAL LOCATION SHEETS
1/4 TYP
PENETRATION PLATE (EXISTING)
50' TO 100'
VARIES REFER TO STATION GENERAL LOCATION SHEETS
SUPPORT TUBE TRAY AT BOTH SIDES OF PENETRATION WITH WELDED ANGLE BRACE
SAMPLE RETURN
SAMPLE NOTE 2
ROOM AIR FLOW
ACAMS/DAAMS HEATED SAMPLE LINE ASSEMBLY
75
FLANGE CONNECTION ACAMS SENSOR DAAMS SENSOR
84
WHITEY PFA-43S4
CAMPANION FLANGE DRILL 2 HOLES 1/4" NPT 3" APART
TYPICAL FOR:
ACAMS-176/DAAMS-134 IN 28" TOX EXH DUCT
ACAMS-XXX IN MPF DISCHARGE A/L
ACAMS-219/DAAMS-128 IN ECR 03-211 DUCT
ACAMS-105/DAAMS-120 IN ECR 03-212 DUCT
ACAMS-180 IN 90" EXHAUST DUCT
ACAMS SENSOR IN ROOM
DAAMS SENSOR IN ROOM
SAMPLE RETURN
SAMPLE
ROOM AIR FLOW
ACAMS/DAAMS CART STATION
TOOELE ARMY DEPOT
TOOELE, UTAH
CHEMICAL STOCKPILE DISPOSAL PROGRAM
INSTRUMENT LOCATIONS
ACAMS/DAAMS/LSS MONITORS
SAMPLE LINE & LSS STATION
EG&G DEFENSE MATERIALS, INC
DWG NUMBER
01-ID-28-001
SHEET 32 OF 35

APPENDIX D

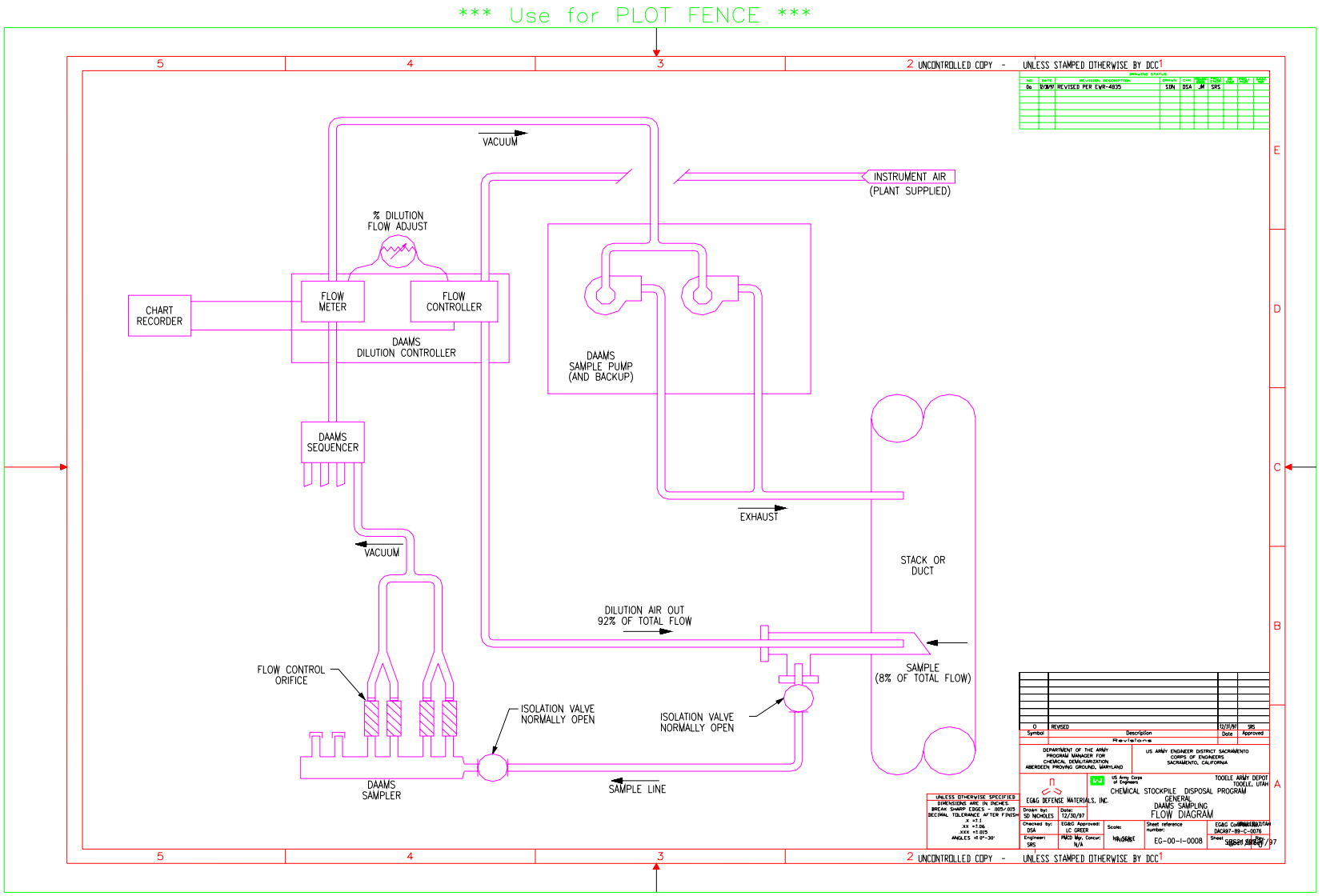
HEATED SAMPLE LINE PARTS DRAWING



MK NO	DESCRIPTION	QTY/ASSY
1	CHEMLEX AUTO-TRACE SELF-REG HEATER CABLE, 10 BTV2-CT, 10 WATT/FT,	
	W/ TINNED COPPER OVERBRAID & FLOUROPOLYMER OVERJACKET	AS REQD
2	CHEMLEX HEATER END SEAL KIT, PMK-HSE2	2
3	CHEMLEX AUTO-TRACE HEATER GLAND, PMKG-G, SAMPLE LINE TERMINATOR	1
4	GROMMET W/ (2) 1/4" HOLES (PMKG-G GLAND)	1
5	GASKET W/(2) 1/4" HOLES & (1) SLOT, 1/4" THK (BUTYL RUBBER)	2
6	APPLETON LIQUID-TIGHT CONNECTOR, STB-100	4
7	APPLETON STEEL BACKED NEOPRENE SEAL GASKET ASSY, STG-100	2
8	APPLETON EXPLOSION PROOF OUTLET BOX W/COVER, MALLEABLE IRON, GFX-100	1
9	APPLETON O-RING, NEOPRENE, GRG-1	1
10	APPLETON VERT & HORIZ CONDUIT SEAL W/ NIPPLE & 3/8" PLUG, EYM-100	1
11	CHEMLEX CORE INSULATOR KIT, 520575-000	2
12	SUPERTHANE TUBING, 1 1/4" OD, 1" ID, ETHER BASED (4 TRANSLUCENT COLORS)	AS REQD
12	NYLON TUBING, 1" OD, 3/4" ID, (CLEAR) ("SPOOLS" ONLY)	AS REQD
13	TEFLON CHEM TUBING, 1/4" OD, 3/16" ID, FEP FORMULATION (SAMPLE LINES)	AS REQD
14	KWIK CLAMP NYLON DBLE BOND HOSE CLAMP, 1 1/4" NOM OD, 1250K	1
15	CONSOLIDATED PIPE HEX BUSHING, FOR 2" PIPE	2
16	2" RIGID STEEL CPLG (PART OF PENETRATION PLATE)	–
17	VX CONVERSON PAD (CLIENT FURNISHED)	–
18	CONSOLIDATED PIPE HEX BUSHING 1"x3/4"	1
19	APPLETON STEEL BACKED NEOPRENE SEAL GASKET ASSY, STG-75	1
20	APPLETON PILOT LIGHT ASSY, – GREEN JEWEL SPL-GR-B	1
21	BULKHEAD FITTING (SEE DETAIL 2 & 3 EG-00-E-0003)	1
22	NIPPLE, 2" SCH. 80	1
85	2-WAY BALL VALVE, WITH INDICATOR SWITCH, JAMESBURY 1/4-21-3600-TT-EW2	9
	QUICK DISCONNECT BODY (for spools) SWAGELOK SS-QT2-B1-400 (BULKHEAD)	9
	QUICK DISCONNECT STEM (for spools) SWAGELOK SS-QT2-S-400	18

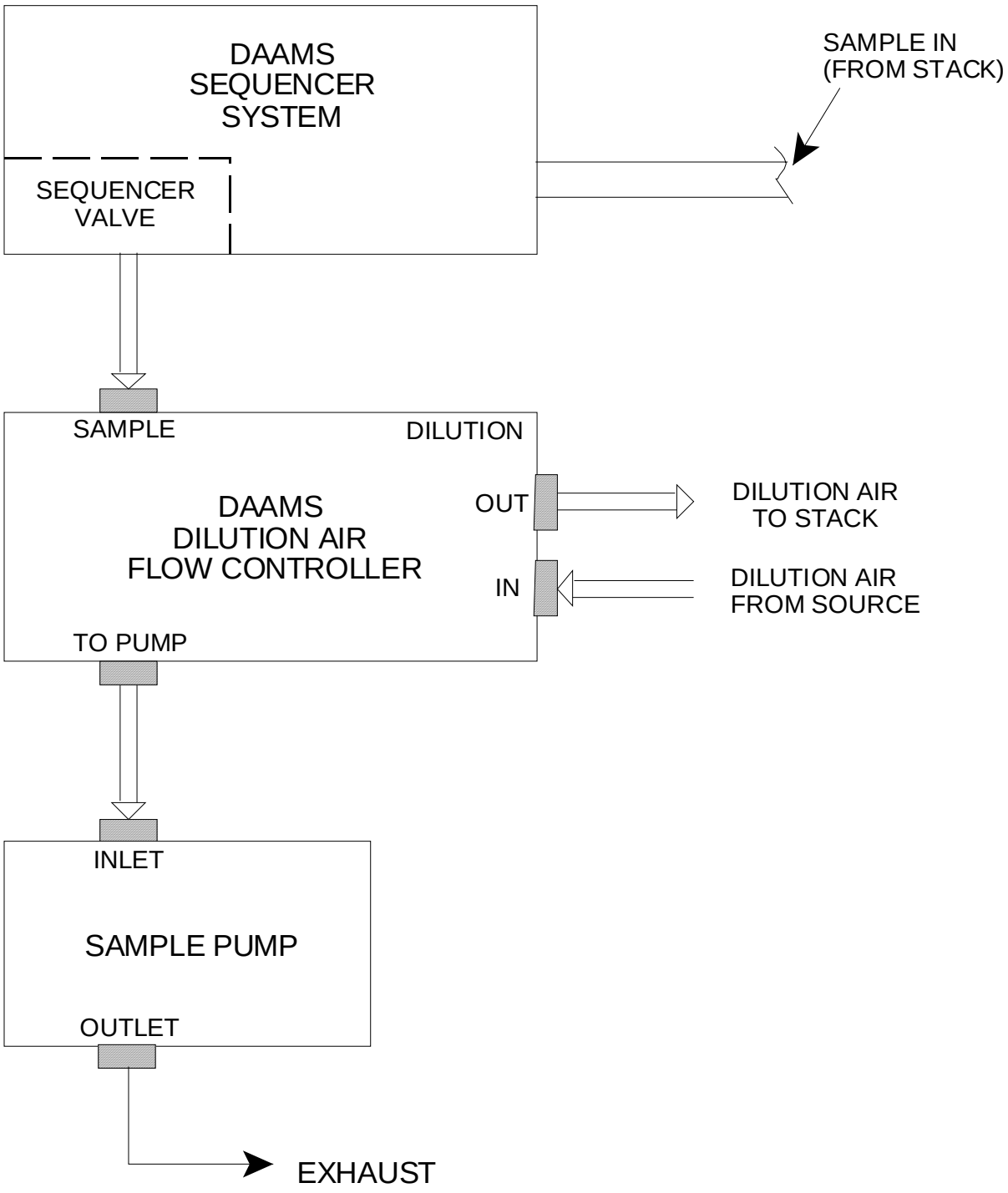
APPENDIX E

DAAMS DILUTION AIR FLOW CONTROLLERS


*** Use for PLOT FENCE ***
UNCONTROLLED COPY - UNLESS STAMPED OTHERWISE BY DCC
VACUUM
INSTRUMENT AIR
(PLANT SUPPLIED)
% DILUTION
FLOW ADJUST
CHART
RECORDER
FLOW
METER
FLOW
CONTROLLER
DAAMS
DILUTION CONTROLLER
DAAMS
SAMPLE PUMP
(AND BACKUP)
DAAMS
SEQUENCER
EXHAUST
VACUUM
STACK OR
DUCT
DILUTION AIR OUT
92% OF TOTAL FLOW
FLOW CONTROL
ORIFICE
ISOLATION VALVE
NORMALLY OPEN
ISOLATION VALVE
NORMALLY OPEN
SAMPLE
(8% OF TOTAL FLOW)
DAAMS
SAMPLER
SAMPLE LINE
CHEMICAL STOCKPILE DISPOSAL PROGRAM
TOOELE ARMY DEPOT
TOOELE, UTAH
GENERAL
DAAMS SAMPLING
FLOW DIAGRAM
EG-00-I-0008

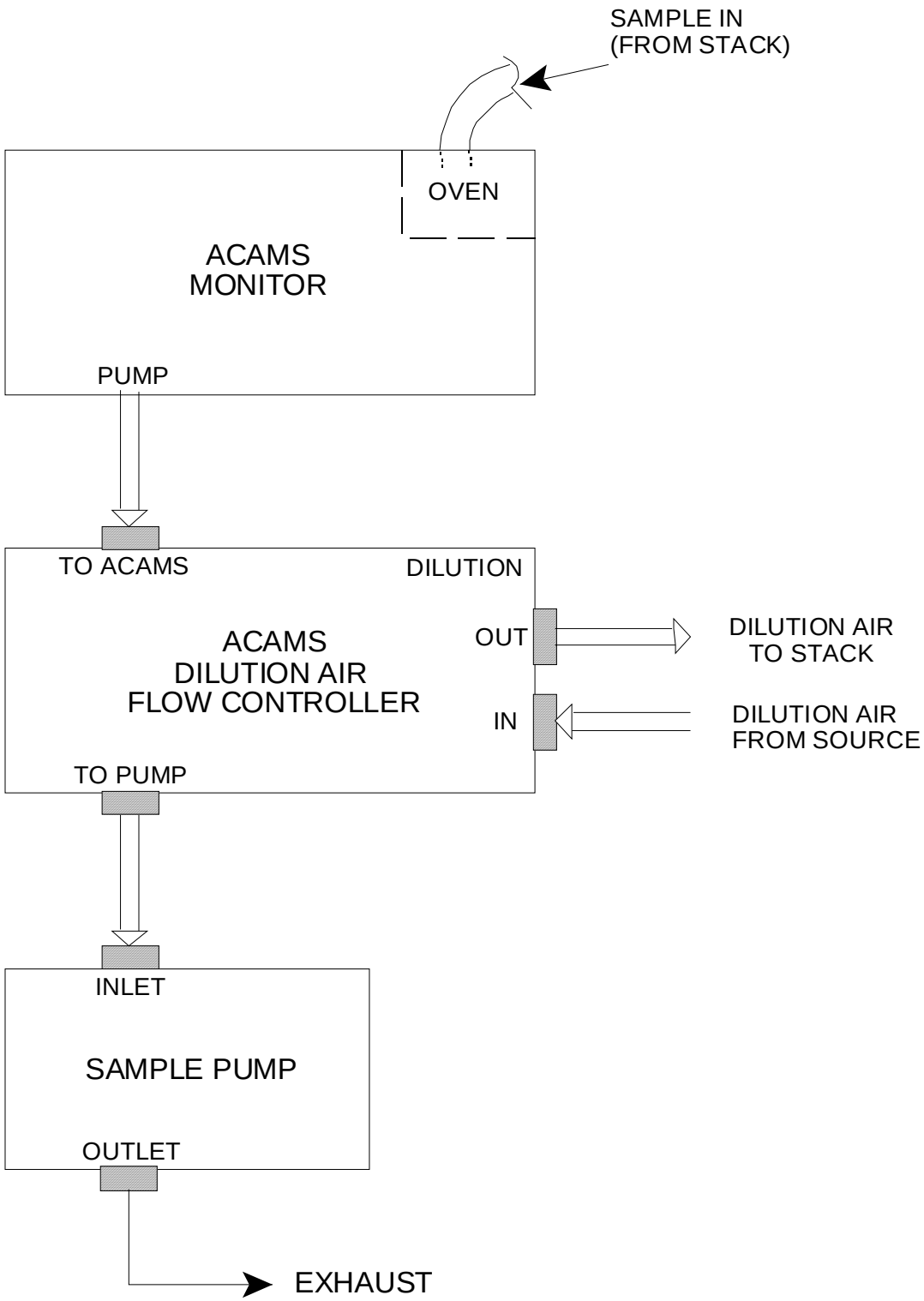
APPENDIX F

DAAMS STACK SAMPLING ASSEMBLY


DAAMS
SEQUENCER
SYSTEM
SEQUENCER
VALVE
SAMPLE IN
(FROM STACK)
SAMPLE
DILUTION
DAAMS
DILUTION AIR
FLOW CONTROLLER
OUT
IN
DILUTION AIR
TO STACK
DILUTION AIR
FROM SOURCE
TO PUMP
INLET
SAMPLE PUMP
OUTLET
EXHAUST

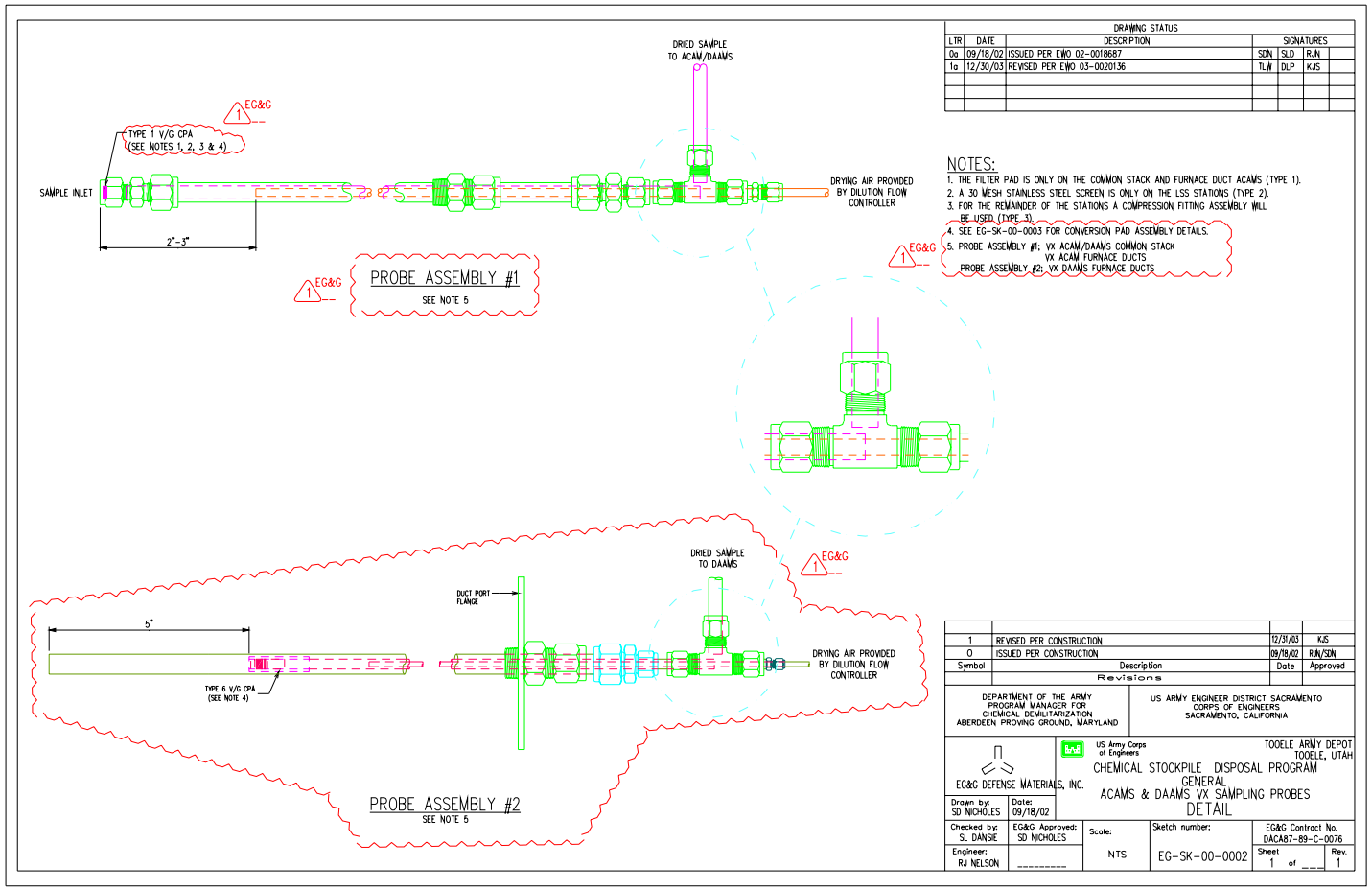
APPENDIX G

ACAMS STACK SAMPLING ASSEMBLY


SAMPLE IN
(FROM STACK)
OVEN
ACAMS
MONITOR
PUMP
TO ACAMS
DILUTION
ACAMS
DILUTION AIR
FLOW CONTROLLER
OUT
DILUTION AIR
TO STACK
IN
DILUTION AIR
FROM SOURCE
TO PUMP
INLET
SAMPLE PUMP
OUTLET
EXHAUST

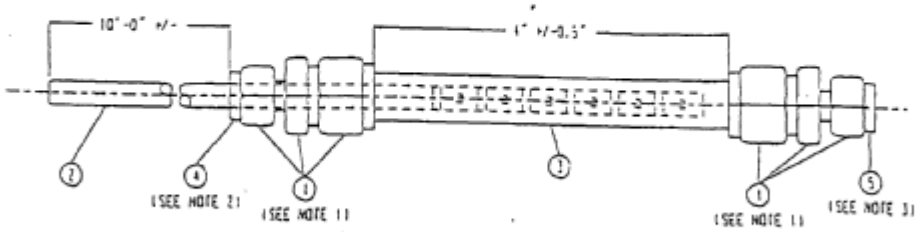
APPENDIX H

ACAMS/DAAMS VX SAMPLING PROBE CONFIGURATION

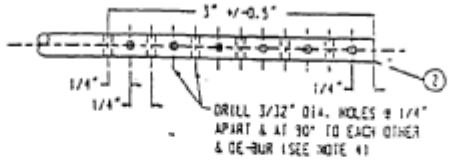

DRIED SAMPLE TO ACAM/DAAMS
EG&G
TYPE 1 V/G CPA (SEE NOTES 1, 2, 3 & 4)
SAMPLE INLET
2"-3"
DRYING AIR PROVIDED BY DILUTION FLOW CONTROLLER
EG&G
PROBE ASSEMBLY #1
SEE NOTE 5
EG&G
DRIED SAMPLE TO DAAMS
EG&G
DUCT PORT FLANGE
5"
TYPE 6 V/G CPA (SEE NOTE 4)
DRYING AIR PROVIDED BY DILUTION FLOW CONTROLLER
PROBE ASSEMBLY #2
SEE NOTE 5
NOTES:
1. THE FILTER PAD IS ONLY ON THE COMMON STACK AND FURNACE DUCT ACAMS (TYPE 1).
2. A 30 MESH STAINLESS STEEL SCREEN IS ONLY ON THE LSS STATIONS (TYPE 2).
3. FOR THE REMAINDER OF THE STATIONS A COMPRESSION FITTING ASSEMBLY WILL BE USED (TYPE 3).
4. SEE EG-SK-00-0003 FOR CONVERSION PAD ASSEMBLY DETAILS.
5. PROBE ASSEMBLY #1: VX ACAM/DAAMS COMMON STACK
VX ACAM FURNACE DUCTS
PROBE ASSEMBLY #2: VX DAAMS FURNACE DUCTS
DRAWING STATUS
LTR | DATE | DESCRIPTION | SIGNATURES
0a | 09/18/02 | ISSUED PER EWO 02-0018687 | SDN | SLD | RJN
1a | 12/30/03 | REVISED PER EWO 03-0020136 | TLW | DLP | KJS
1 | REVISED PER CONSTRUCTION | 12/31/03 | KJS
0 | ISSUED PER CONSTRUCTION | 09/18/02 | RJN/SDN
Symbol | Description | Date | Approved
Revisions
DEPARTMENT OF THE ARMY PROGRAM MANAGER FOR CHEMICAL DEMILITARIZATION ABERDEEN PROVING GROUND, MARYLAND
US ARMY ENGINEER DISTRICT SACRAMENTO CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA
US Army Corps of Engineers
TOOELE ARMY DEPOT TOOELE, UTAH
EG&G DEFENSE MATERIALS, INC.
CHEMICAL STOCKPILE DISPOSAL PROGRAM
GENERAL
ACAMS & DAAMS VX SAMPLING PROBES
DETAIL
Drawn by: SD NICHOLES
Date: 09/18/02
Checked by: SL DANSIE
EG&G Approved: SD NICHOLES
Scale: NTS
Sketch number: EG-SK-00-0002
EG&G Contract No. DACA87-89-C-0076
Engineer: RJ NELSON
Sheet 1 of ___
Rev. 1

APPENDIX I

GB SAMPLE PROBE FOR AIRLOCKS



SAMPLING PROBE ASSEMBLY
WITH LEAK CHECK/CHALLENGE UNIT



SAMPLING PROBE DRILLING DETAIL

MATERIAL LIST

ITEM	DESCRIPTION	EG&G PART NO.	VENDOR PART NO.	VENDOR
1	1/4"x1/2" SWAGELOK UNION	PIPU-035	N/A	SL VALVE & FITTING
2	1/4" O.D. TEFLON TUBING	LABS-1219	315933	CADILL
3	1/2" O.D. TEFLON TUBING	N/A	299244	CADILL
4	1/4" O-RING	ORING-0235	SWAGELOK	N/A
5	NO HOLE FERRULE	MMM-000076	ALLTECH	N/A

NOTES

1. 1/4"x1/2" SWAGELOK UNIONS MUST BE DRILLED TO ALLOW SAMPLING PROBE TO PASS EASILY THROUGH THE FITTING.
2. THE BACKING RING OF THE 2 PIECE FERRULE WILL BE REPLACED BY AN O-RING ON THE 1/4" SIDE IN THE REDUCING UNION.
3. THE 1/4", 2 PIECE FERRULE WILL BE REPLACED WITH A NO-HOLE FERRULE (AS A PLUG). EXCEPT DURING THE AGENT CHALLENGE WHEN THE NO-HOLE FERRULE WILL BE REPLACED BY A PARTICULATE FILTER TO ALLOW THE CHALLENGE TO PASS THROUGH THE ENTIRE ASSEMBLY.
4. HOLES DRILLED IN THE 1/4" SAMPLING PROBE MUST BE OFFSET AS TO PREVENT LIQUID FROM CONTAMINATING THE SAMPLING LINE. THE HOLES MUST BE DE-BURRED TO ALLOW THE PROBE TO SLIDE THROUGH THE 1/4"x1/2" UNION EASILY WITHOUT DAMAGING THE O-RING SEAL.

Sample Probe for Airlocks
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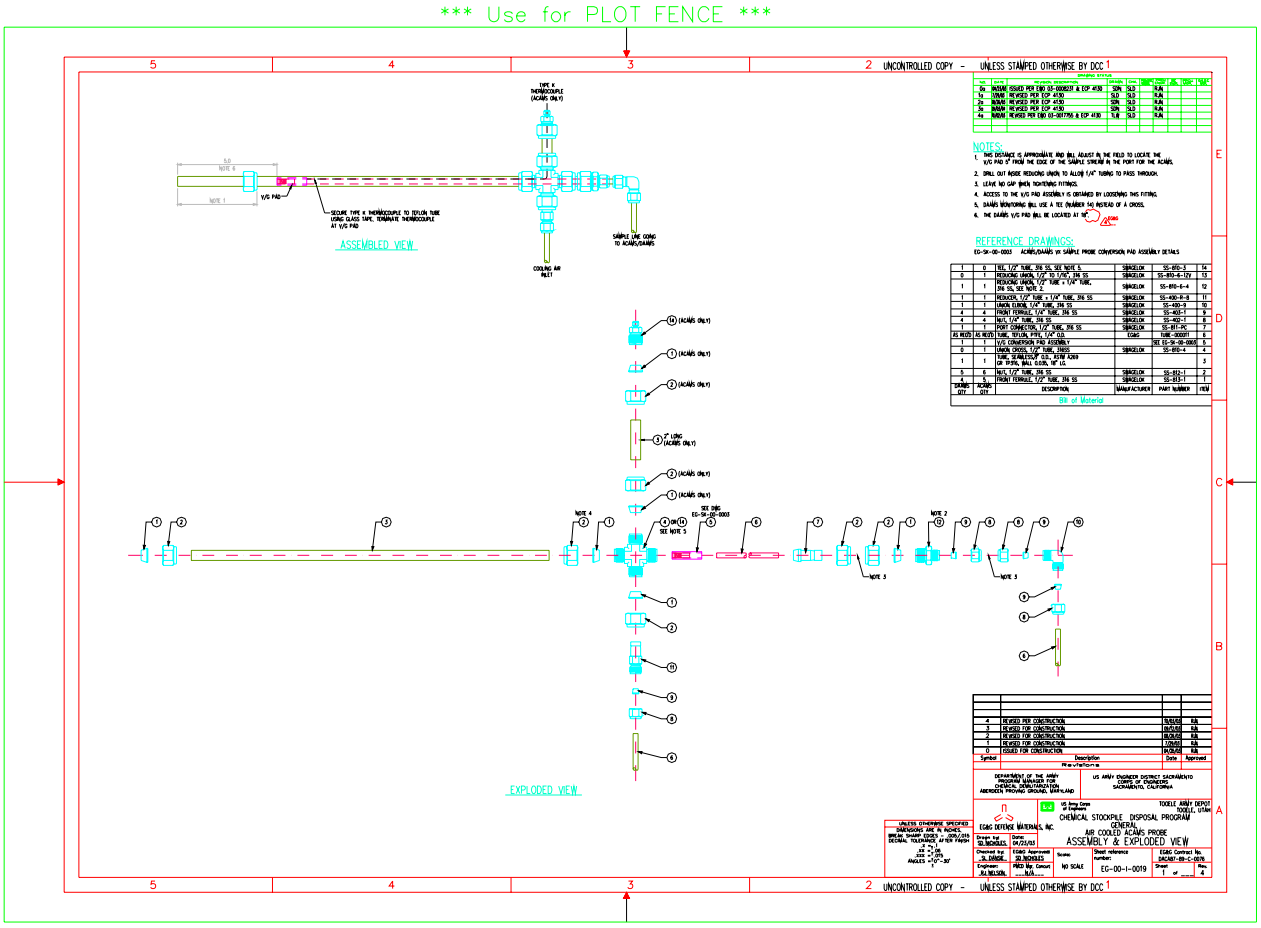
APPENDIX J

VX MPF Discharge Airlock Air Cooled Sampling Probe for ACAMS and DAAMS


*** Use for PLOT FENCE ***
UNCONTROLLED COPY - UNLESS STAMPED OTHERWISE BY DCC
ASSEMBLED VIEW
EXPLODED VIEW
NOTES:
REFERENCE DRAWINGS:
Bill of Material
CHEMICAL STOCKPILE DISPOSAL PROGRAM
GENERAL
AIR COOLED ACAMS PROBE
ASSEMBLY & EXPLODED VIEW
EGG DEFENSE MATERIALS, INC.
TOOELE ARMY DEPOT
TOOELE, UTAH
EG-00-I-0019

APPENDIX K

MUSTARD AGENT MONITORING PLAN-Mustard Start Up

1.0 **Scope:**

This Monitoring Plan is to supplement the VX Agent Monitoring Plan. It contains supplemental monitoring requirements that apply when development work is being done in preparation for the mustard agent campaign. This work consists of developing monitoring and analytical instrument operating parameters, writing procedures and performing precision and accuracy tests as well as other work of a developmental nature. The monitoring defined in the plan will be performed in the Chemical Assessment Laboratory, Monitor Support Building and the TOCDF Clinic. During the initial part of this start up period, no neat agent will be used. During this time only DAAMS monitoring is required. CAMDS will provide agent standards in RDT&E concentrations. As the qualifications and certifications progress, agent in concentrations above the RDT&E levels will be used at the laboratory only. At which time ACAMS monitoring will be initiated. This plan is not intended to be used for disposal of mustard bulk agent or munitions. Prior to the start of the mustard demil campaign, an Agent Monitoring Plan for that specific purpose will be developed.

2.0 Purpose:

The primary purpose of Monitoring is to limit/prevent, and document exposure of personnel to chemical warfare agents, and to protect the environment from the introduction of agents.

3.0 **RESPONSIBILITIES:**

The monitoring defined in this plan will be performed initially by CAMDS and will be transferred to TOCDF as capabilities and certifications for agent mustard are obtained.

4.0 **AGENT MONITORING PROCEDURES**

4.1 Air Samples: The sample point locations, and station numbers identified in this addendum are the same as those identified in the drawings for the VX Agent Monitoring Plan.

4.2 Procedures: While CAMDS performs the monitoring identified in this appendix, they will comply with their procedures, and the requirements of the Monitoring Concept Plan and the Laboratory Quality Assurance Plan. When the monitoring responsibility is transferred to TOCDF, the TOCDF LQCP, LOPs along with the LQAP and Monitoring Concept Plan will become effective.

4.3 Documentation: CAMDS will collect data and maintain the documentation for their monitoring and laboratory activities relative to this appendix. TOCDF will maintain the audit trail once the monitoring becomes TOCDF's responsibility.

5.0 SAMPLING PARAMETERS

The operational control limits on sampling parameters such as sample flow rate and duration of sample time are specified by CAMDS during their period of responsibility. Before TOCDF accepts the monitoring responsibility, the sampling and operating parameters will be validated with precision and accuracy tests and baseline performance studies as applicable. The parameters are listed in the LQCP (ref: Sections 7.7.1 and 9.1.8.4).

6.0 QUALITY CONTROL

Quality control compliance and documentation for the monitoring performed by CAMDS will be performed and maintained within their organization and will be archived by CAMDS. When the monitoring is passed to TOCDF, TOCDF quality control inspection and documentation system will be used in accordance with the TOCDF LQCP.

6.1 Failure to Monitor

The monitoring identified in this Appendix must be operating and in control during the mustard agent operations described in Section 1.0 of this Appendix. If it is not, and the exceptions listed in Attachment 22 (ref: paragraphs 22.11.2.2. through 22.11.2.5) do not apply, then this failure to monitor will be classified as a "Missed Monitoring"and will be reported as such.

7.0 MONITORING PLAN

7.1 List of Monitors

The attached table outlines the monitoring stations for this Mustard Start Up plan.

7.2 LCOs

The monitoring identified in this plan is NOT part of the LCOs for plant operations since this plan is for mustard development work, and not plant operations.

7.3 Temporary Changes

Temporary changes may be made to the requirements of this plan by following the normal TOCDF procedures that provide proper approvals and documentation. This will allow for adding to, reducing the number of, or changing the configuration of agent monitors on a temporary basis. The Permittee shall notify the Utah State DSHW Executive Secretary orally of any reduced monitoring applicable to this Attachment prior to implementation.

8.0 SUSPENSION OF MONITORING

The mustard monitoring identified in this appendix will be started at the CAL or MSB before mustard agent standards are received at those locations. It may be suspended after the agent has been removed, and there are no agent readings above 0.2 TWA at those locations for 24 hours. The monitoring in the clinic must be started and continue as long as there is agent or agent readings above 0.2 TWA at the CAL or MSB.

9.0 ENTERING CAL HVAC FILTERS

Once mustard agent above RDT&E concentrations has been introduced to the CAL, mustard monitoring along with GB and VX monitoring will be required inside the filter and down wind before workers can enter the filter housing for conversion pad or exhaust filter replacement. The monitoring is performed using a trailer equipped with ACAMS and DAAMS. The trailer is used instead of RTAPS. Conversion pad and exhaust filter replacement is done in accordance with approved procedures.

10. EQUIPMENT NOT PREVIOUSLY IDENTIFIED

Mustard Pre-filter: In order for mustard agent to stay affixed on the sorbent bed in a DAAMS sample tube, a mustard pre-filter must be used. The pre-filter is much the same as a DAAMS tube in appearance. It is used on the inlet to the DAAMS tube and must be used during the entire time of aspiration of the DAAMS sample. Mustard pre-filters are not required for ACAMS due to the short duration of the sample time. The mustard pre-filter is a NO_2 filter.

11. Mustard Monitoring Overview

The following is a discussion of the differences encountered when monitoring for mustard agent versus the nerve agents.

When the ACAMS is used to monitor for HD/HT/H it is configured to detect sulfur as opposed to phosphorous for GB and VX/G-analog. This is accomplished by changing the light filter at the inlet to the photomultiplier tube. Additionally, some set points for some of the operating parameters are changed. These will be identified when the P&A tests are performed and controlled in accordance with the LQCP.

Tests at other facilities have demonstrated that a NO_2 pre-filter is needed when using Tenax GC sampling media for HD. Since the ACAMS has a cycle time of a few minutes, a pre-filter is not needed for ACAMS. All DAAMS sampling will use pre-filters. Their use will be studied and validated during the P&As performed at TOCDF. Tenax sorbent beds are used in DAAMS for mustard sampling.

AGENT MONITORING PLAN

Mustard Start Up

AGENT MONITORING PLAN

Explanation of Column Titles

Station Number

The station number was assigned by Monitoring. This is the number used by PDARS. The letters are used to identify the area monitored, i.e., AL for Airlock, OBS for Observation Corridor. The numbers are specific to the geographic location being monitored. This number cannot be reassigned to any other location due to the restraints caused by the 40-year record-keeping requirement. When a station number is suffixed by an S, it indicates that the sample line is movable to various sample points. The S indicates spool. The station number is suffixed to indicate the agent for that station. H is for agent mustard.

ACAMS/DAAMS Tag Number

This number identifies the tag number for the ACAMS and/or DAAMS specific to that station number. If an ACAMS or DAAMS is removed for repair and a new ACAMS or DAAMS is installed at that station, the tag number will stay with the new ACAMS/DAAMS. This is to prevent the need to update the Monitoring Plan each time maintenance is required.

Unit Location

This designates the detector's physical location by room, floor plan number, and the drawing number (See Attachment 22, the VX monitoring plan for a copy of the drawings).

Area Monitored

This designates the geographic location being monitored by room and floor plan number.

Power Type

UPS - Battery backup used on ACAMS. DAAMS using the same station number will be connected to UPS.

SPS - Commercial power backed up by an emergency generator. DAAMS only stations will use the Secondary Power (Distribution) System (SPS). The heat trace cable for all sample lines are on SPS power.

Sample Point Hazard Category

A through E, with "A" being a room where liquid agent is likely to be present to "E" where no agent will be found**.** See the VX monitoring plan for a complete definition.

Monitoring Level

Indicates the ACAMS or DAAMS monitoring level or sensitivity of the monitor. In other words, if TWA is listed, the ACAMS will be operating in the TWA mode and the DAAMS analysis will be performed on an instrument that is operating in the TWA range.

Alarm Level

The alarm level at the ACAMS station is the same as it is in the Control Room. The ACAMS at the CAL do not have individual alarms at the control room. They have one alarm in the control room which is activated by any single ACAMS. The alarm level shown is in terms of the monitoring level shown in the previous column.

Sample Line Length

Lengths of the sample lines are listed with an accuracy of ±20%.

DAAMS Mode

The mode is an indication of the purpose of the DAAMS. Examples are:

ACAMS Confirm: The DAAMS is used to confirm an ACAMS reading in the event of an alarm.

Historical: The DAAMS is used in an area that is very unlikely to have agent contamination and is to provide evidence that there hasn't been any detectable concentration in that area.

Primary DAAMS: In this case the DAAMS is the only agent monitor, in cases such as LSS air monitoring.

Comments

Additional information as needed.

STA #	ACAMS TAG #	DAAMS TAG #	UNIT LOC FLOOR PLAN # DRAWING #	AREA MONITORED FLOOR PLAN #	POWER TYPE SPS/UPS	SAMPLE POINT HAZ CAT	MONITORING LEVEL	ALARM LEVEL Z	SAMPLE LINE LENGTH ±20%	DAAMS MODE	COMMENT
MED 904H	399	491	MEDICAL ROOM 102-136 14-ID-28-008-1-C4	MEDICAL RM 102-136	UPS	C	TWA	0.2	10’	See Note Below	See Note 9 Appendix A
MSB 950H	N/A	443	INSIDE MSB 12-ID-28-006-1-C3	MSB ACAMS REPAIR AREA	SPS	D	TWA	N/A	2'	PRIMARY	DRINKING ALLOWED
CAL 951H	393	444	MONITORING HOUSE 44-ID-28-020-1	FILTER EXHAUST STACK	UPS	N/A	TWA	0.2	65'	See Note Below	
CAL 952H	N/A	445	MONITORING HOUSE 44-ID-28-020-1	FILTER 13 MIDBED	SPS	N/A	TWA	N/A	50'	PRIMARY	
CAL 953H	N/A	446	MONITORING HOUSE 44-ID-28-020-1	FILTER 8 MIDBED	SPS	N/A	TWA	N/A	50'	PRIMARY	
CAL 954H	N/A	447	MONITORING HOUSE 44-ID-28-020-1	FILTER 5 MIDBED	SPS	N/A	TWA	N/A	23'	PRIMARY	
CAL 974H	394	449	CORR-117 44-ID-28-020-1	DAAMS LAB RM 119	UPS	D	TWA	0.2	35'	See Note Below	
CAL 980H	395	450	CORR-117 44-ID-28-020-1	GC/MS #2 RM 115	UPS	D	TWA	0.2	25’	See Note Below	
CAL 983H	396	451	CORR-117 44-ID-28-20-1	TOX LAB RM 114	UPS	C	TWA	0.2	20’	See Note Below	
CAL 986H	397	452	CORR-117 44-ID-28-020-1	CAL RM 113	UPS	C	TWA	0.2	35' ACAMS	See Note Below	
CAL 987HS	398	N/A	CORR 117 44-ID-28-020-1	CORR 117 SPOOL	UPS	N/A	TWA	0.2	50’	N/A	
CAL 991H	N/A	448	LUNCHROOM 103 44-ID-28-020-1	LUNCH RM 103	SPS	E	TWA	N/A	31’	PRIMARY	EATING AND DRINKING ALLOWED

NOTE: Mustard operations will be started in two steps. Dilute agent, and Neat Agent. During dilute agent operations, only DAAMS monitoring is required. The DAAMS will be the primary monitor. Before neat operations begin, ACAMS will be added to the stations as indicated in the table above, at that time the purpose of the DAAMS is to confirm ACAMS alarms.

The CAL ACAMS in this table provide an agent alarm and a malfunction alarm to the Control Room but not an agent concentration.